

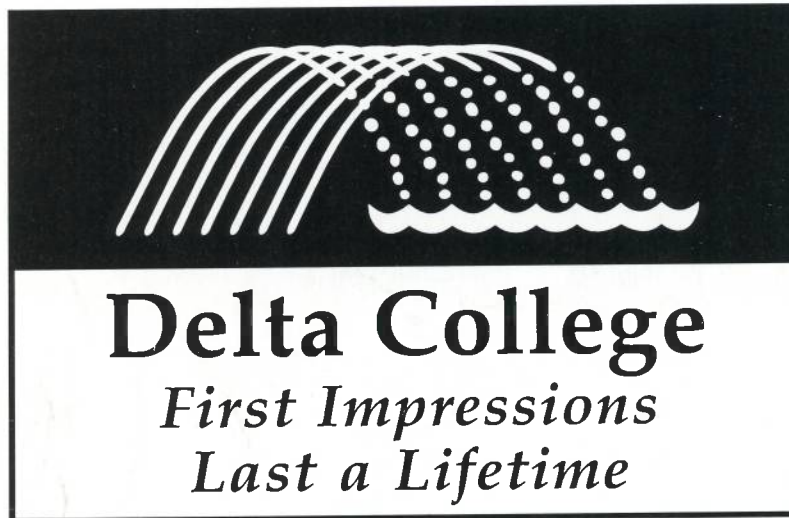


# *First Impressions*

LAST A LIFETIME

Delta College  
1995-1996





**Mailing Address:** University Center, Michigan 48710

**Telephones:** (517) 686-9000 (Switchboard)  
(517) 662-4431 (from Midland)  
(517) 686-9555 (24 hour information line)  
(517) 686-0573 (Telecommunication device  
for the deaf/TDD)

**FAX:** (517) 686-8736

Delta College personnel made every reasonable effort to determine that everything stated in this catalog was accurate at the time it was printed. Courses and programs offered, tuition and fees, services, and the academic calendar, together with other matters contained herein, are subject to change without notice by Delta College for reasons related to student enrollment, level of financial support, or for any other reason, at the discretion of the College. Delta College further reserves the right to add, amend, or repeal any of their rules, guidelines, policies and procedures. Although the provisions of this catalog are not to be regarded as a legal contract, students enrolled at Delta College are responsible for all regulations in this catalog as well as additions or changes to regulations as they are posted or printed in other College publications.



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# WELCOME TO DELTA COLLEGE

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1. Table of Contents
2. Welcome from Our President
3. Accreditation and Memberships
4. Introducing Delta College
5. Profile of Our Students

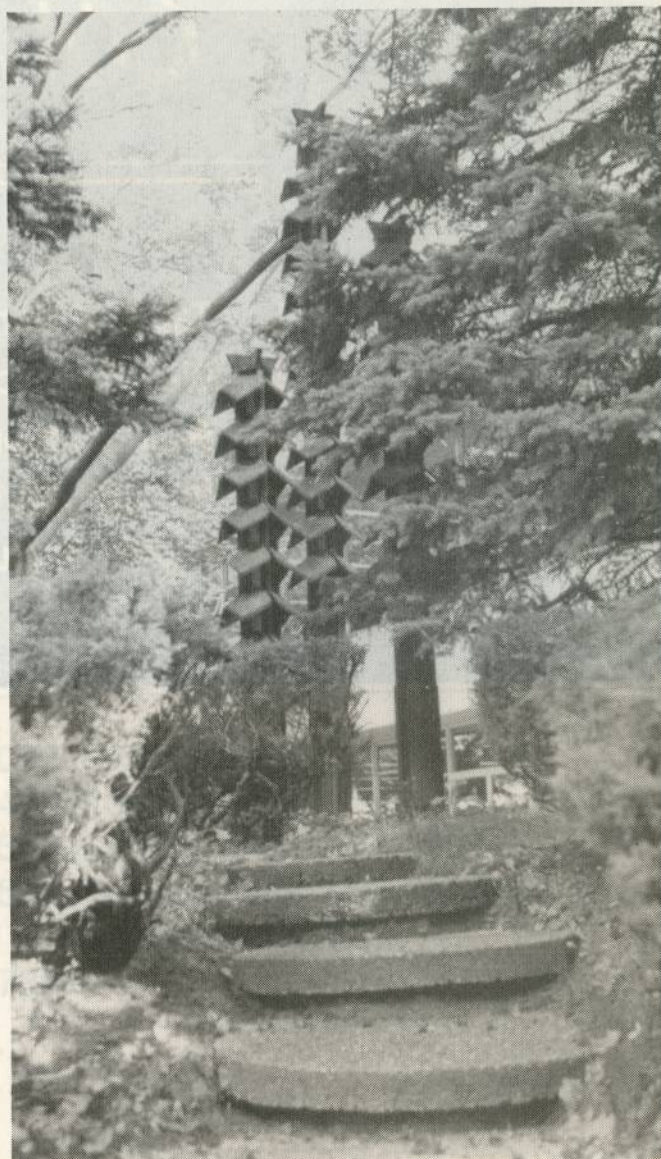


# Table of Contents

It was our aim, as we prepared this catalog, to provide you with a tool that will be of help to you throughout the time you spend with us at Delta College pursuing your educational goals. We hope you will find it useful, whether you are a new student, a returning student, or a member of the community involved in our various outreach activities. The Table of Contents below tells you what is covered in each section of this catalog. If you are looking for a specific topic, check the Index on page 212, where you should find that topic listed, along with the page on which you will find the information. If you come across a term you don't understand, check page 210 for Definitions of College Terms. If you can't find information important to you or you find something confusing, stop in at the Welcome Center and talk with the staff. They will be able to clarify for you or direct you to the appropriate staff person for an answer, and they will pass on to us anything you think should be added to or changed in this catalog.

## WELCOME TO DELTA COLLEGE and Happy Reading!

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# Welcome



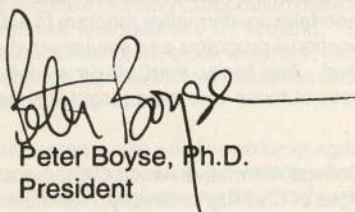
As **your** community college, we bring you a variety of opportunities to make it as easy as possible to pursue your educational, training, retraining, and personal growth needs...

- Academic occupational programs that prepare you for the world of work
- Academic courses that are easily transferable to other colleges and universities
- Leisure and personal interest classes and workshops to enrich your life
- Programs and services offered for business and industry through our Corporate Services Division

Delta College has the lowest tuition in the region, small classes taught by dedicated faculty, and a wide variety of services offered by a staff who will make every attempt to meet your individual needs. There are many interesting, highly motivated people just like you attending Delta College. They come from diverse backgrounds, representing many ages, circumstances, and ethnic ancestries. They come for the expectation of discovery, the hope for achievement, and the desire to add new dimensions to their lives.

The rewards of a quality education are numerous. Look around you. Thousands of Delta graduates, people just like you, are the teachers, the health professionals, the business owners, and the leaders of our community. Accept my challenge to you to use your time and effort here wisely, because the quality education you receive at Delta College is your investment in your future.

On behalf of our Board of Trustees, students, faculty, staff and administration, I welcome you to Delta College.

  
Peter Boyse, Ph.D.  
President



# Accreditation and Memberships

**Accredited Continuously by:  
North Central Association  
of  
Colleges and Secondary Schools**

**Approved by the Michigan Department of Education**

## Accrediting/Approving Agencies

Accreditation Board for Engineering Technology

- Electronic Engineering Technology
- Mechanical Engineering Technology

American Dental Association Commission on Dental Accreditation

- Dental Assisting
- Dental Hygiene

American Physical Therapy Association Commission on  
Accreditation in Physical Therapist Education

- Physical Therapist Assisting

Commission on Accreditation of Allied Health Education Programs

- Respiratory Therapy
- Surgical Technology

Joint Review Committee on Education in Radiologic Technology

- Radiography

Michigan Board of Nursing

- Practical Nursing
- Registered Nursing

Michigan Department of Natural Resources/Operator Training

- Water/Wastewater Treatment Technology

Michigan Department of Public Health/Water Division

- Water/Wastewater Treatment Technology

National Automotive Technicians Education Foundation

- Automotive Service Technician

National League for Nursing

- Registered Nursing

Students wishing to review documents pertaining to accreditation should contact the Dean of Students in K-Bay.

## College Memberships

American Association of Collegiate Registrars  
and Admissions Officers (AACRAO)

American Association of Community Colleges

American Association of Community Colleges International/Inter-  
cultural Consortium

American Council on Education

American Management Association

Associate Degree Council, National League for Nursing

Michigan Association of Collegiate Registrars and Admissions  
Officers (MACRAO)

Michigan Association of Community Colleges Instructional  
Administrators (CIA)

Michigan Community College Association

Michigan Community College Community Service Association

Michigan Community Colleges for Global Education (MCCGE)

Michigan International Development Education Outreach Network  
(MIDEON)

Michigan Liberal Arts Network for Development

Michigan Occupational Deans' Administrative Council

National Association of College and University Business Officers

National Council for Occupational Education (NAT)

National League for Innovation in the Community College

National Association of Student Aid Administrators

Practical Nursing Council, National League for Nursing

## Affirmative Action Statement

Delta College is committed to providing equal opportunity through its employment practices, educational programs, and through the many services it provides to the community. The College will make all personnel decisions, offer programs that will foster educational opportunities, and maintain a program of services designed to serve the community, without regard to, but not be limited to race, color, religion, sex, marital status, age, national origin, or handicap. Furthermore, the College will undertake an affirmative program of action to expand equality of opportunity in employment. The College will develop and maintain educational programs and services that are sensitive to the emerging needs of members of minority groups, women, and the handicapped. And finally, the College will initiate programs that will increase, on the part of all personnel, a sensitivity to the interests and needs of those who have historically been discriminated against. (Board of Trustees 4/83)

Inquiries regarding the Delta College non-discrimination policy may be directed to the Delta College Affirmative Action Officer located in Office A-2, lower level of the main building, or phone 686-9547. If you wish to contact the Office of Civil Rights directly, mail inquiries to the Office of Civil Rights, Region Five, Pl. Bldg., Room 222, 55 Erie View Plaza, Cleveland, Ohio 44114, or phone (216) 293-4970.



# Introducing Delta College

## Delta College Begins

Delta College has continued, without interruption, the educational opportunities that were previously provided by Bay City Junior College. In the mid-1950's, as the demand for education beyond high school increased in the tri-county area, the percentage of students attending Bay City Junior College from outside the K-12 Bay City Public School District steadily increased. The enrollment was approximately 50 percent non-resident, with about 40 percent of the enrollment coming from Saginaw. Early in 1955, seven community leaders from Bay, Midland and Saginaw met to discuss the possibility of a tri-county college. Their interest and action prompted the following developments:

1955: Organization of the Tri-County Committee of 300 formed to study the needs of higher education in the Saginaw Valley area.

1956: The final report of the Committee of 300, outlining the need to establish and finance a new college, was received.

1957: Legislation was submitted to the State of Michigan Legislature to finance and establish a new institution of higher education.

1957: Voters of Bay, Saginaw, and Midland counties formed a community college district under Act 182 of the Public Acts of 1957 and authorized a levy of 1.5 mills to construct and operate a college.

1958: Bonds were sold to provide the financial structure for Delta College and campus construction began.

1959-61: Members of the faculty and staff of Bay City Junior College assisted in planning for the new college. Many of the Bay City Junior College faculty, students, and staff became part of the new college as Bay City Junior College operations were assimilated into Delta College.

1961: Delta College opened.

## Campus Site

The College is located on a 640-acre campus complex in Bay County. Noted for its beautifully-landscaped center garden, the College has miles of nature trails, an outdoor classroom, running and fitness trails, tennis courts, and archery and golf areas, as well as a covered bridge. The natural surroundings of Delta College positively enhance the learning process of students. The Delta College site, at University Center, Michigan in Bay County, lies almost midway between the counties' major cities of Saginaw (69,512), Bay City (38,936), and Midland (37,819). This triangle forms the heart of the Saginaw Valley area which is drained by the Saginaw River and its tributaries, northward to the Saginaw Bay and Lake Huron. Bay County adjoins the Saginaw Bay, an important recreational area and waterway whose ports are part of the St. Lawrence Seaway system.

## Tri-County District

The tri-county area is one of the major concentrations of population within the state. The 1990 population census reports an area population of approximately 399,320. Sixty-three percent of the people are classified as urban residents, with 44 percent residing within city limits.

The high percentage of urban population can largely be explained by the concentration of industry within the area. Over 95 percent of the employed work force are in occupations other than agriculture. Each county has a major concentration of industry. The Dow Chemical Company and Dow Corning Corporation have large plants and international corporate headquarters in Midland. Bay City's employment centers around Chevrolet Motors. Saginaw, the largest industrial center, has a number of General Motors industries and has the largest foundry concentration in the country.

The tri-county area is also well known for its agricultural products. Sugar beets, beans, and potatoes are grown extensively throughout the Valley. On a national basis, Saginaw and Bay County rank number one and two in sugar production and one and five in bean growing, respectively. Beans are shipped from the area to foreign ports.

## Accreditation

Delta College is accredited by and is a member of the North Central Association of Colleges and Secondary Schools (NCA). Initial accreditation was granted the College in October, 1962 by the Michigan Commission on College Accreditation. A status study to prepare for candidacy was submitted to the NCA in May, 1964, as a first step toward regional accreditation. College officials were notified in July, 1966, that the College had been accepted as a candidate for accreditation based on a report of a NCA visitation team. The Self-Study Report was completed in May, 1967, and accreditation was granted in April of 1968. NCA has subsequently reaccredited the College in 1973, 1984, and again in 1993. Several occupational academic programs also have received additional accreditation status from their corresponding professional boards, councils, or regulatory groups.

## National League for Innovation

Delta College is a charter member of the National League for Innovation in the Community College. The League is comprised of 17 college districts with 54 campuses in 11 states, enrolling more than 500,000 students. Delta's membership is significant recognition that it is devoted to the improvement of learning through experimentation and innovation. The League places a strong emphasis on research, evaluation, and dissemination of information on innovations. In this way, potentially valuable new approaches to instruction are made known and an opportunity is provided to judge their suitability for use at other colleges. Participation in League activities enables Delta to adapt and adopt those innovative practices which have proved effective elsewhere, while sharing the results of its own innovations with colleges in other districts. This means that residents of all ages in the tri-counties have the opportunity to share in the benefits of improved instruction and services provided by the College.





## MISSION STATEMENT

Our mission is to be an innovative and responsive community college dedicated to meeting the diverse educational and personal growth needs of our students by providing excellent learning opportunities and support services.

\* \* \* \*

The College Mission reflects our Values.

## VALUES STATEMENT

At Delta College, we value our students, our employees, and our constituents. As we hold the institution in trust for them, we aspire to these ideals:

**The Learning Experience and the Pursuit of Knowledge:** Our students and our personal and intellectual growth depend upon the pursuit of knowledge and an appreciation for life-long learning.

**Academic Excellence:** Our dedication to academic excellence encourages and supports the quest to maintain high academic standards.

**Access:** Our commitment to an open-door policy ensures that our constituents may exercise their legitimate right to access College services.

**Professional Integrity and Collegiality:** Our ethics and our respect for others guide our relationships, professional activities, and the performance of our duties to the best of our ability.

**Academic Freedom:** Our dedication to the free exchange of ideas and information promotes our growth as an educational institution.

**Quality:** Our commitment to quality programs and services ensures our response to a dynamic environment through self-evaluation and innovation.

**Diversity:** Our College reflects the needs of our diverse College community.

**Shared Governance:** Our trust in shared governance compels us and our students to contribute to the evolution of College policies and operating procedures.

**Community Leadership and Service:** Our local and global participation and leadership exemplify dedication to our mission.

**Environmental Safety:** Our obligation to clean, comfortable, safe, efficient, and current facilities aids in the fulfillment of the Delta College mission.



## "I Decided on Delta"

1st Row (L to R): Lori Kapp, Colleen Carmen  
2nd Row (L to R): Cass Varner, Christina Juarez, Jennifer Schaeding  
Back Row (C to R): Mark Drake, André Martin

## GUIDING PRINCIPLES

The implementation of our College Mission and its underlying Values are supported by certain Guiding Principles.

Based on our Mission and Values Statements, Delta College is committed to:

...providing a range of programs, opportunities, and experiences that enrich the lives of the residents of our community.

...continuously improving and regularly measuring the quality of all of our programs and services.

...accepting the challenge of our open door policy by providing programs and services appropriate to our students' needs and backgrounds.

...providing services to help students overcome obstacles that impede the achievement of their educational goals.

...working with K-12 districts, other colleges and universities, and business and industry to share and respond to each others' needs.

...creating an environment that fosters appreciation and respect for the uniqueness of each individual.

...expanding our students' cultural and global awareness.

...the free exchange of all ideas for their own sake as well as for their potentially practical applications.

...providing a work environment which supports the professional development of all College employees.

...shared governance, understanding that we are all members of the same College community with the privilege of ownership and the obligation of participation.

...employee involvement in the community.

## "Counselor's Quote"

*Ruth Ederer: Swan Valley High School*

*"Delta provides a viable option for so many students for so many different reasons. I believe that Delta has quality programs along with quality instruction. It gives an excellent beginning to students' futures."*



# Profile of Our Students

When Delta College opened its doors in September, 1961, there were 1,700 students, whereas in the Fall Semester of 1994, approximately 10,750 academic and skilled trades students plus 2,000 community education students were enrolled in courses and programs on the Campus and throughout 30 neighborhood centers. Who are these students and why do they enroll at Delta? Actually, there is no Delta College student stereotype. Students differ considerably in their ethnic, social, and economic backgrounds and their educational goals. Most students (about 88%) reside in the tri-county district and more students are enrolled on a part-time basis than those attending full-time because most students are also working full or part-time. Some are rich, some are poor, most are neither, but approximately two-thirds (67%) of students enrolled for six or more academic credits receive some form of financial aid. Some have precise career plans while others want to explore before they decide; some are taking classes for personal enrichment reasons. What most have in common, though, is that they are seeking to learn and improve their lives. Over the years, students have been asked about their reasons for choosing and attending Delta and the five major reasons given have been: location of Delta (close to home and/or work); curriculum or programs offered; low costs; course work relevant to goals; quality of instruction. The diversity of students at Delta College is illustrated below.

## Class Designation

Freshmen	58.7%
Sophomores	41.3%

## Student Age Distribution

19 years old and under	26.3%
20-24	30.7%
25-29	13.5%
30-44	24.1%
45 and over	5.3%
Not designated	0.1%

## Gender

Females	61.5%
Males	38.5%

## Geographic Residences

Saginaw County	44.2%
Bay County	29.7%
Midland County	14.1%
Other Michigan Counties	11.6%
Out of State	0.4%

## Ethnic Backgrounds

Caucasian	85.0%
African-American	7.9%
Hispanic	4.0%
Not designated	1.5%
Asian	0.6%
Native American	0.8%
International	0.3%

## Declared Program Choices

Occupational Programs	47.2%
Transfer Programs	32.4%
Undecided	13.8%
Personal Enrichment	4.4%
Guests & Dual Enrolled	2.2%

## Attendance Distribution

Day hours only	49.8%
Day and evening combination	27.6%
Evening hours only	21.6%
Weekends only	1.0%

\*Figures based on Fall Semester 1994 (pertains only to students enrolled in academic courses).







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# THE ENROLLMENT PROCESS

1. Academic Calendar
2. Admission and Pre-Enrollment Information
3. Financial Aid
5. Veterans/Reservists Information
6. Steps to Success Process
7. Registration



# Academic Calendar 1995-96

Activity	Spring '95 Semester 15 Weeks	Spring '95 Session 7-1/2 Weeks	Summer '95 Session 7-1/2 Weeks	Fall '95 Semester 15 Weeks	Winter '96 Semester 15 Weeks	Spring '96 Semester 15 Weeks	Spring '96 Session 7-1/2 Weeks	Summer '96 Session 7-1/2 Weeks
Applications Available for Financial Aid	Jan. '94	Jan. '94	Jan. '94	Jan. '95	Jan. '95	Jan. '95	Jan. '95	Jan. '95
Admission	----- Continuous -----							
District Status Change	----- One Week Before Your Registration -----							
Last Day Readmission for Phone Registration	April 7	April 7	April 7	July 12	Nov. 4	April 6	April 6	April 6
Schedule of Academic Classes Available	March Third Week	March Third Week	March Third Week	April Third Week	Nov. First Week	March Third Week	March Third Week	March Third Week
Phone Registration Begins <sup>1</sup>	April 7	April 7	April 7	July 20	Nov. 10	April 5	April 5	April 5
<b>First Day of Semester/Session<sup>2</sup></b>	<b>May 3</b>	<b>May 3</b>	<b>June 26</b>	<b>Aug. 28</b>	<b>Jan. 4</b>	<b>May 1</b>	<b>May 1</b>	<b>June 24</b>
Last Day to Audit <sup>2,3</sup>	May 9	May 9	June 30	Sept. 7	Jan. 14	May 11	May 11	July 4
Last Day Add Without Instructor Signature <sup>2</sup>	May 9	May 5	June 28	Sept. 1	Jan. 10	May 7	May 3	June 26
Last Day Add/Drop With No Grade <sup>2,3</sup>	May 13	May 8	July 1	Sept. 7	Jan. 14	May 11	May 7	June 30
Last Day of Offset <sup>2</sup>	May 27	May 27	July 20	Sept. 21	Jan. 28	May 25	May 25	July 18
Last Day for 100% Refund <sup>2</sup>	May 9	May 9	July 2	Sept. 3	Jan. 10	May 7	May 7	June 30
Last Day for 50% Refund <sup>2</sup>	May 13	May 13	July 6	Sept. 7	Jan. 14	May 11	May 11	July 4
Last Day to Withdraw With "W" <sup>2,3</sup>	June 23	May 26	July 21	Oct. 20	Feb. 23	June 21	May 24	July 19
Last Day to Apply for Graduation	June 23	June 23	June 23	Oct. 20	Feb. 23	June 21	June 21	June 21
Last Day to Apply for Pass/No Credit <sup>1,2,3</sup>	July 13	June 6	July 28	Nov. 17	April 3	July 25	June 11	Aug. 2
Incomplete Deadline for Required Coursework <sup>3</sup>	Dec. 1	Dec. 1	Dec. 1	Apr. 1	Dec. 1	Dec. 1	Dec. 1	Dec. 1
Health Validation Applications Accepted <sup>1</sup>	June 23-Aug. 17	June 23-Aug. 17	June 23-Aug. 17	Oct. 20-Dec. 15	Feb. 23-April 24	June 21-Aug. 15	June 21-Aug. 15	June 21-Aug. 15
Last Day to Withdraw With "WE" or "WP" <sup>2,3</sup>	Aug. 10	June 16	Aug. 9	Nov. 17	April 3	July 25	June 11	Aug. 2
<b>Holidays: No Classes</b>	<b>May 29 July 4</b>	<b>May 29</b>	<b>July 4</b>	<b>Sept. 2-5 Nov. 22-26 Dec. 17</b>	<b>Feb. 26-Mar. 2 Apr. 7 Apr. 24</b>	<b>May 27 July 4 Aug. 15</b>	<b>May 27</b>	<b>July 4</b>
<b>Last Day of Semester/Session<sup>2</sup></b>	<b>Aug. 17</b>	<b>June 23</b>	<b>Aug. 16</b>				<b>June 21</b>	<b>Aug. 14</b>

## NOTATIONS

<sup>1</sup>Dates subject to change. Complete registration information, including Special Phone Registration dates for Health and Nursing First Clinical Courses, is listed in each semester's Schedule of Academic Classes booklet. See Section III, Programs of Study, Health Program Procedures, page 29.

<sup>2</sup>Some courses begin and end other than these dates; see each semester's Schedule of Academic Classes booklet. Deadline dates apply only to regular semester/session classes; check with the Records & Registration Office for deadlines for these courses.

<sup>3</sup>For grading policies, see Section IV, Academic Policies and Information, Grading System, pages 84 - 85.

Community Services Classes: Registration dates, times and procedures are different from above; consult your Community Services Schedule of Classes published each semester.



# Admission and Pre-Enrollment Information

## Admission Criteria

Delta College has an "open-door" policy which allows admission of persons from varying ages, backgrounds, interests, and abilities. You are not required to have a minimum grade point average or a certain test score to be granted general admission to the College. Your general admission, however, does not guarantee entry into all academic programs within the College. Academic programs of study that require specific prerequisites or eligibility requirements are outlined in Section III of this catalog.

If you are included in any **one** of the following categories, you are encouraged to apply for admission:

1. High school graduates.
2. Persons who have passed a high school equivalency exam (G.E.D.).  
\*Non-high school graduates are encouraged to take the G.E.D. exam; however, G.E.D. results are not required for general admission.
- \*3. Adults 19 years of age or older who have not attended high school for at least six months since the time their high school class would have graduated.
4. Currently enrolled high school students who have permission from their parents and high school counselor or principal.
5. Approved and authorized persons from other countries entering the U.S. for educational purposes under a student visa.

**\*Note:** If you do not have a high school diploma or have not successfully completed the G.E.D., you may be restricted from receiving federal financial aid if "ability to benefit" criteria are not met. We encourage you to contact the Admissions Office, the Office of Financial Aid, or the Assessment/Testing Services Office for detailed information concerning "ability to benefit" criteria.

## Admission Dates

**Although Admission Applications are accepted and processed up through the first week of classes each semester**, we encourage you to submit your Application at least 30 days prior to your enrollment period and preferably as early as 6 to 8 months. **If you plan to request financial aid, it is essential for you to apply for admission and for financial aid 8 to 10 weeks prior to registration.**

Our traditional starting dates are:

- Fall Semester (late August)
- Winter Semester (early January)
- Spring Session (early May)
- Summer Session (late June)

## Admission Procedures

No Application fee required. Completed Admission applications may be returned to the Admissions Office/Welcome Center via the mail or in person. Please review the following admission categories and follow the procedures outlined.

1. **High School Seniors:** If you plan to enroll the summer or fall after your June graduation, you need to complete an Admissions Application and give it to your high school counselor or principal. Ask your high school to send your Application, along with your current transcript, to the Admissions Office. Be sure to request that a **final transcript** be sent upon your graduation.
2. **Dual Enrolled Students:** If you plan to enroll in Delta courses and in high school courses during the same semester, you need to submit a special Dual Enrollment Application. This Application, available at your high school, needs to be signed by your parent and high school counselor or principal. Request that your high school send a current copy of your transcript to the Admissions Office.

3. **Adults Out of High School:** Complete an Admissions Application and return it to the Admissions Office. You need to request each previously attended high school, education center, and/or college to send a copy of your official transcript to the Admissions Office.
4. **Transfer Students:** Complete an Admissions Application and request each college/university attended to send your official transcript to the Admissions Office. If you have allowed adequate time, a credit evaluation will be completed prior to registration. A maximum of 38 credits may be applicable toward a Delta Associate degree. **If your official transcripts are received prior to the last day of telephone registration, you may register by phone.**
5. **Guest Students:** If you are attending another college and wish to take Delta courses on a Guest status, you should complete Part I of the Michigan Uniform Undergraduate Guest Application (available at your current institution or from Delta). Ask the Registrar at your current college to complete Part II and to forward it to Delta's Admissions Office. Be sure to check with your current institution to determine if your Delta courses will satisfy requirements.
6. **Readmitted Students:** If you are a former Delta student who has not taken a course since Winter 1984, you need to be readmitted. Readmission may be accomplished by telephoning the Admissions Office or by completing an Update Form, available from the Admissions Office.
7. **International Students:** If you are not a U.S. citizen or a permanent resident and you are requesting an I-20 form, you need to complete the International Admissions Application.

## Transcripts

If you are a new student in any category except Guest, or if you are a returning student who has attended another college or university since Delta, you need to request immediately that your official transcript be sent to:

Delta College  
Admissions Office  
University Center, MI 48710

Official transcripts include: high school, college, university, G.E.D., and adult education course work.

## After You Apply

After you apply you will receive a prompt response to your mailed Admission Application. Applications submitted in person will be processed immediately. Upon acceptance, you will be issued a student number, an I.D. card, and further information about Steps to Success and/or registration procedures. After being accepted, most new and some returning students are required to participate in pre-enrollment procedures called the **Steps To Success** process. Please see page 17 for further information.

## Admissions Advising/Campus Tours

We invite you to call with any questions you may have and especially invite you to make an appointment with an Admissions Representative. We'll discuss pre-enrollment procedures, the financial aid process, and general college information. The Admissions Office phone number is: (517) 686-9093 or from Midland, phone 662-4431, ext. 9093.



## Student I.D. Cards

You are required to have a Delta Identification Card which includes your name, student number, signature, and validation sticker. Every **new** student is eligible for one I.D. Card, free of charge. This Card should be validated each semester and used throughout your entire enrollment at Delta. An official sticker for the semester is affixed at the Records and Registration Office or during registration. There will be a \$1 charge for a lost I.D. Card. Lending your Delta I.D. Card to anyone or failure to present it when requested by College officials is a violation of College regulations and may result in disciplinary action. Each student is personally liable for all obligations incurred by the use of this Card.

## International Student Admission

Delta College is authorized under federal law to admit and enroll non-immigrant alien students. In order to obtain a visa for entry into the United States on an F-1 student visa status, you must present to the U.S. Consul abroad a valid passport, proof of sufficient finances, and a completed I-20 form.

An I-20 form (Certificate of Eligibility) is issued to admitted Delta students after the College has determined that you have met the following conditions:

1. **Academic Requirements:** You must be 18 years of age or older and have successfully completed a course of study equivalent to high school level. The equivalent of a "B" grade point average is required in all courses; i.e., 14 out of 20, 70% out of 100%. You are required to submit certified copies of your high school leaving certificate, national and international exams, and transcripts which reflect courses and marks earned during the last three years of high school.
2. **Language Proficiency:** If you are from a country where English is not the official native language, you must be proficient in English to pursue your studies or you must make arrangements to enroll in an English Language Center prior to acceptance. English proficiency means that you speak, write, and read English fluently. Such fluency is necessary to insure your enrollment, proper placement, and success in achieving your educational goals.

You must furnish Delta College with proof of having received a minimum score of 500 on the TOEFL (Test of English as a Foreign Language) or official transcripts documenting successful completion of an advanced course in English from a licensed English Language Center. An additional test and interview may be required to establish English proficiency before enrollment. Further information about TOEFL can be obtained by writing to: TOEFL, P.O. Box 6151, Princeton, NJ 98541. **International Transfer Students** who are enrolled in a U.S. college may submit proof of successful completion of a transferable English language course with a minimum of "B" average or better.

3. **Financial Verification:** You are required to submit an up-to-date financial support statement from a sponsor and their bank, which testifies to the sponsor's willingness and capability to support you while you are at Delta. If you are not sponsored by your government or an organization, you must submit a bank statement which testifies to the existence of enough funds in your family's account to provide for attendance. All College tuition is due and payable in full at the time of registration. **Loans, scholarships, and deferred payments are not available for international students.**

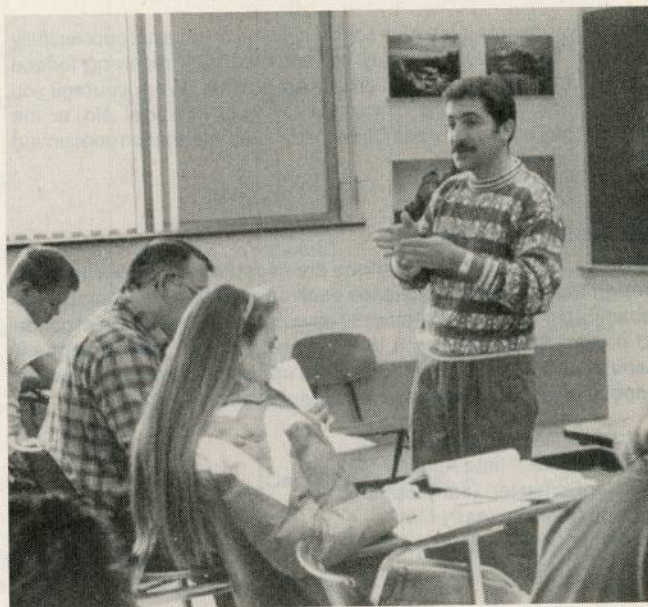
4. **Health Statement:** You are required to submit a health form, which states your physical and mental condition.

5. **Deadlines:** All documents, such as applications, recommendations, official transcripts, financial statements of support, certificates of English proficiency, and medical reports, must be in the Admissions Office at least **four months** preceding the semester you desire to be admitted.

Semester	Application Deadline	Semester Begins
Fall	May	Last week of August
Winter	September	First week of January
Spring	January	Beginning of May

### Important Notes:

- Applications for admission to Delta College will be mailed upon written request. High school records submitted by friends or relatives on your behalf are not accepted. These records must be mailed directly to Delta College by your secondary school, college, or the Ministry of Education in your country.
- All documents must be original or certified copies and must be accompanied by official English translations. Transcripts must be signed by the principal or registrar of each school or college and impressed with a seal or stamp of the school attended. You must not leave your country, language center, or college before you receive official acceptance from Delta College.



*"I love my job!"*

*"The reason that first brought me to Delta was the people. I turned down other colleges because I felt that the people at Delta were the most friendly. Being from Lebanon, people often treat you differently, sometimes hostilely, because you are a foreigner.*

*At Delta there is a closeness that comes from faculty members having a good relationship with the administration. When the President comes by for a chat to visit and see how you are, that makes you feel good and at home."*

Habib Khail,

Math and Computer Science Instructor,  
has taught at Delta for 5 years



# Costs\*

Delta offers quality education at the lowest cost in the tri-county area.

\* Note: Costs are for the 1994-95 academic year.

## Tuition

In-District .....	\$52.50 per credit
Out-District .....	\$70 per credit
Out-Of-State/International .....	\$100 per credit

## Course Fees

Admission Application Fee .....	\$ 0
Registration Fee .....	\$15
Late Registration Fee .....	\$ 0
Orientation Fee .....	\$ 0
Assessment Fee .....	\$ 0
Student I.D. Card .....	\$ 0
Replacement I.D. Card .....	\$ 1
Transcript Fee - Three to Five Days .....	\$ 5
Transcript Fee - Same Day .....	\$10
Library Fee .....	\$ 0
Tutoring Fee .....	\$ 0
Parking Fee (except violations) .....	\$ 0
Student Activities Fee .....	\$ 0
Graduation Fee .....	\$ 0
Late Graduation Fee .....	\$25
Diploma Fee .....	\$ 0

Other Costs: In addition to tuition and fees, you must be prepared for the other costs incurred when attending college. These include books, supplies, transportation, room and board, miscellaneous personal expenses, child care, and any costs associated with disabilities.

## Residency Policy and Guidelines

Educational costs at Delta College are shared by students, the taxpayers in the Delta College District, and the State of Michigan. Property taxes paid by residents of the Delta College District supplement student tuition and state aid for in-district status students; therefore, the tuition charged legal residents of the Delta College district is the lowest and students who are classified as out-of-state residents are charged the highest tuition. A student's residency classification is established when admitted to Delta College and may only be changed as detailed under No. 4 below.

**1. Residency Classifications:** A person will pay course tuition according to one of the following classifications of legal residence:

- In-District Status:** Legal resident\* of Bay, Midland, or Saginaw counties. (This is the Delta College District)
- Out-of-District Status:** Legal resident\* of Michigan but not of the above three counties.
- Out-of-State Status:** International students and all others not classified within a or b above.

\*A legal resident is one whose permanent, primary residence is where he or she intends to return whenever absent from college. A dormitory or apartment rented only for the period of time during college enrollment is not a permanent primary residence.

**2. In-District Criteria:** For tuition purposes, an in-district student is an American citizen or permanent resident **who can provide acceptable proof** of legal residence within Bay, Midland, or Saginaw counties **for at least six consecutive months** immediately preceding the first day of the semester in which the person plans to enroll.

**3. Proof of In-District Residence:** All students are subject to a check of their residency status at registration. Students furnishing false information will be subject to disciplinary action. The following examples are types of documents which are considered in determining proof of in-district residency:

- A current/valid Michigan driver's license, Michigan Secretary of State I.D. card, or valid Michigan motor vehicle registration in the student's name indicating a permanent address within Bay, Midland, or Saginaw counties.
- A property tax receipt from Bay, Midland, or Saginaw counties.
- A current voter registration card indicating an in-district address.
- Other legal documents such as court-issued guardianship papers.

**4. Change of Residency Status:** While attending Delta College, students may petition the Dean of Enrollment Services to change their residency classification. Petition forms are available in the Admissions or Records and Registration Offices and must be submitted, with proof of in-district residence (see No. 3 above), at least one week prior to the student's registration date. Students must meet the criteria stated in No. 2 above. Any adjustments made in tuition due to a change in residency status shall not be retroactive.

**Note: Guest students** from other colleges and **international students** on a student, working, or visitor visa should not expect to have their residency status changed while attending Delta College, as the definition of legal resident in No. 1 above has not been met.

If you have questions regarding residency, please contact the Admissions Office at (517) 686-9093; from Midland, 662-4431, ext. 9093.



## FINANCIAL AID PROGRAMS

PROGRAMS	WHO IS ELIGIBLE					HOW MUCH	HOW TO APPLY	
FEDERAL PROGRAMS	A	B	C	D	E		F	G
FEDERAL PELL GRANT	✓	✓	✓		✓	Awards range from \$400-\$2,340.	✓	✓
FEDERAL WORK-STUDY	✓	✓	✓		✓	Awards range from \$500-\$1,300 per semester. The student earns these funds through part-time employment and receives a paycheck every 2 weeks.	✓	✓
FEDERAL SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT	✓	✓	✓		✓		✓	✓
FEDERAL STAFFORD LOAN (a) Subsidized (b) Unsubsidized (you pay interest while in school)	✓	✓	✓		✓	a) Cost minus Family Contribution minus Other Aid = Need. b) Cost minus Other Aid (including subsidized loan) = Need.	✓	✓
FEDERAL PARENT LOAN (PLUS)	✓	✓	✓		✓	Parents of dependent students. Cost minus Financial Aid = Need.	✓	✓
VETERANS BENEFITS	✓				✓	Veterans who are eligible or certain dependents of deceased or disabled veterans.		
<b>STATE OF MICH. PROGRAMS</b>								
MICHIGAN ALTERNATIVE STUDENT LOAN PROGRAM (MI-LOAN)	✓	✓	✓			Cost minus Financial Aid = Need. Borrower must pass credit worthiness test.	✓	✓
MICHIGAN COMPETITIVE SCHOLARSHIP PROGRAM	✓	✓	✓	✓		Students who qualify as semi-finalists on ACT test. Awards made by State of Michigan Department of Education.	✓	
MICHIGAN INDIAN TUITION WAIVER				✓		Must have written certification of being at least one-quarter Native North American.	✓	
MICHIGAN WORK-STUDY	✓	✓	✓	✓	✓		✓	✓
MICHIGAN EDUCATIONAL OPPORTUNITY GRANT PROGRAM	✓	✓	✓	✓	✓		✓	✓
MICHIGAN ADULT PART-TIME GRANT	✓	✓	✓	✓	✓	Students who are part-time, independent, and out of high school for a minimum of two years.	✓	✓
SINGLE PARENT/HOMEMAKER/SEX EQUITY GRANT	✓	✓	✓			Low income single parents, displaced homemakers, and non-traditional students enrolled in vocational/community services programs.	✓	✓
TUITION INCENTIVE PROGRAM (TIP)	✓			✓	✓	Students who demonstrate financial need and who have graduated from high school or received a GED after May 1, 1991 and before reaching the age of 20.		
<b>DELTA COLLEGE PROGRAMS</b>								
BOARD OF TRUSTEES SCHOLARSHIP	✓				✓	Tri-County high school graduates recommended by their guidance counselors. Based on academic excellence.		
ADULT EDUCATION SCHOLARSHIP	✓				✓	Tri-County adult ed graduates recommended by their high school directors. Based on academic excellence.		
PRIVATE DONOR SCHOLARSHIP	✓	✓			✓	Students must meet the selection criteria of the various donors. In most cases, students should have a GPA of 3.0 or better and show financial need.	✓	
SHORT TERM LOAN						Students who demonstrate ability to repay and pass credit check.		

- A. MUST MEET STANDARDS OF ACADEMIC PROGRESS FOR FINANCIAL AID RECIPIENTS.  
 B. MUST NOT OWE A REFUND OR BE IN DEFAULT ON ANY TITLE IV AID.  
 C. MUST DEMONSTRATE FINANCIAL NEED AS DETERMINED BY THE FEDERAL FORMULA.  
 D. MUST BE A MICHIGAN RESIDENT.

- E. MUST BE ENROLLED IN A DELTA COLLEGE ACADEMIC DEGREE OR CERTIFICATE PROGRAM.  
 F. COMPLETE AND SUBMIT THE FREE APPLICATION FOR FEDERAL STUDENT AID ACCORDING TO THE DIRECTIONS PROVIDED.  
 G. COMPLETE AND SUBMIT THE DELTA COLLEGE APPLICATION FOR FINANCIAL AID ACCORDING TO THE DIRECTIONS PROVIDED.



# Financial Aid

The Delta College Office of Financial Aid administers a comprehensive program of financial assistance to help you, if you are qualified, with the cost of attending college. Funds are made available by Delta, the State, the federal government, organizations, and individuals to assist you if you demonstrate financial need and/or outstanding scholarship. All application forms required to begin the financial aid process are available from the Delta Admissions and Financial Aid Offices and area high schools. Forms for the next academic year (August through May) are available the preceding January and you should pick them up and follow the application procedures as early as possible. The application process can take from six to 8 weeks and applications filed less than two months prior to registration will usually not be processed in time for registration and may be received too late to be awarded some types of aid.

## Application Procedures

1. Complete the Free Application for Federal Student Aid (FAFSA). If you are a returning student, you should complete the Renewal Application mailed to you by the federal government. If you do not receive one by January 1, you should complete the FAFSA. When you have read the directions carefully and accurately answered every question, sign the form and follow the mailing directions. This will generate a Student Aid Report (SAR), which will be sent directly to you.
2. In addition to No. 1, you must complete a Delta College Financial Aid Application and return it directly to the Delta College Office of Financial Aid, J-100.
3. When you receive your SAR, look it over carefully to make sure it is correct, sign it, and mail it or take it immediately to the Delta College Office of Financial Aid, J-100. The information on this SAR will be used to determine your eligibility for the Federal Pell Grant and, regardless of Pell eligibility, for most other types of aid.

In addition to demonstrating need, to be eligible for aid from federal and State programs you must, in most cases, enroll and attend at least half-time; must maintain satisfactory academic progress as defined by the financial aid programs and Delta College (see Section IV, Academic Policies & Information, Academic Status for Financial Aid Recipients); must be enrolled in a program of study leading to a certificate or degree; must be a U.S. citizen or permanent resident of the U.S.; must not be in default on any student loan; and must not owe a repayment on any federal grant. Due to current regulations, if you do not have a high school diploma or a G.E.D., you must prove your ability to benefit by receiving minimum scores as determined by the U.S. Department of Education on one of the tests approved by that Department. If ability to benefit applies to you, you should contact the Delta College Assessment/Testing Services Office.

When all the above steps have been taken and all eligibility requirements met, you will be considered for all programs administered by the College. The financial assistance offered to you may include one or more of the programs listed on the chart on page 14.

Pell Grants and federal student loans are subject to multiple disbursements. The total amount of your Pell Grant will be divided between the enrollment periods. If you attend full-time during the Fall and Winter Semesters, there will be no Pell Grant left for the Spring Semester. If you attend part-time during the Fall and Winter Semesters, there may be Pell Grant left for the Spring Semester. All federal student loans are disbursed in two payments. The first disbursement is released after 30 days of attendance in the loan period. Second checks for two-semester loans are released after 30 days of the second semester. Second disbursement checks of one-semester loan periods are released after the midpoint of the semester has passed. All Federal Stafford Loan borrowers must attend an Entrance Loan Information meeting at Delta College before receiving their first checks.

Financial Aid recipients must meet Standards of Academic Progress to continue to receive aid. See page 84 for Standards of Academic Progress for Financial Aid Recipients.

## Rights of Financial Aid Applicants

1. You have the right to know what financial aid programs are available.
2. You have the right to know the deadlines for submitting applications for each of the financial aid programs available.
3. You have the right to know how financial aid will be distributed, how decisions on that distribution are made, and the basis for these decisions.
4. You have the right to know how your financial need was determined.
5. You have the right to know what resources (such as parental contribution, other financial aid, your assets, etc.) were considered in the calculation of your need.
6. You have the right to know how much of your financial need as determined by the institution has been met.
7. You have the right to request an explanation of the various programs in your student aid package.
8. You have the right to know the Delta College refund policy.
9. You have the right to know what portion of the financial aid you received must be repaid, the payback procedures, the length of time you have to repay, and when repayment is to begin.
10. You have the right to know how Delta College determines whether you are making satisfactory progress and what happens if you are not.

For an explanation of any of the above rights, please make an appointment with a Financial Aid Officer.

## Responsibilities of Financial Aid Applicants

1. You must complete all application forms accurately and submit them on time to the right place.
2. You must provide correct information. In most instances, misreporting information on financial aid application forms is a violation of law and may be considered a criminal offense which could result in indictment under the U.S. Criminal Code.
3. You must return all additional documentation, verification, corrections, and/or new information requested by either the Office of Financial Aid or the agency to which you submitted your application.
4. You are responsible for reading and understanding all forms that you are asked to sign and for keeping copies of them.
5. You must accept responsibility for all agreements that you sign.
6. You must perform the work that is agreed upon in accepting a Work-Study job.



# Veterans/Reservists Information

How many times have you heard someone say, "I wish I had taken advantage of the G.I. Bill while I had the chance." Well, now you have the chance, and with a little help from your fellow veterans, you can put a career in your future.

The Veterans Services Office serves veterans, reservists, and dependents of veterans. We can help you:

- Explore benefits to which you are entitled.
- Document your military training for college credit
- Prepare the forms and documentation required by the Department of Veterans Affairs for veterans education benefits
- Assist in upgrading discharge status
- Contact outside agencies for other assistance
- Take advantage of career planning and academic support services

## Veterans Education Benefits

Payments are based upon the number of credits in which you are enrolled and the length of the courses. The payment is made directly to you each month by the Department of Veterans Affairs if you maintain satisfactory progress and follow an approved program. **You should be prepared to pay your tuition at the time of registration for academic courses each semester.**

### Your Responsibilities

**Transfers:** You must have your official transcript(s) sent to the Delta College Admissions Office prior to enrollment for credit evaluation.

**Certifying:** You must certify each semester at the Veterans Services Office. Bring your schedule showing that your tuition and fees have been paid.

**Program Choice:** You may receive benefits **only for those courses necessary for graduation.** Any deviations from the program guidelines must be discussed with the Veterans Services Office.

**Repeated Courses/Audit Grades:** You may not receive VA benefit payments for courses in which you previously earned a satisfactory grade. Also, VA benefit payments are not made if you audit courses. Should you take a course under the pass/no credit grade option, the VA will not pay benefits for a "NC" (no credit) grade.

**Failing Courses:** You are expected to successfully complete all courses in which you enroll. If a failing grade is assigned, **YOU MUST FILL OUT A STATEMENT OF ATTENDANCE FORM.** This form is available at the Veterans Service Office. Failure to provide this statement will result in the College reporting the first day of the semester as the last day of attendance for the course(s). This will result in an overpayment of benefits.

**Satisfactory Progress:** You must be making satisfactory progress in your program and toward fulfillment of graduation requirements. The policy for Satisfactory Progress is located on pages 88-89 of this catalog.

**Dropping Courses:** You are expected to file a drop form at the Records and Registration Office as soon as you stop attending class. You **must also notify the Veterans Services Office immediately** upon dropping or withdrawing from classes in order to modify certified credit hour load. It is to your benefit to report mitigating circumstances that have affected attendance in classes.

**Attendance Policy:** You will be required in the Certificate Program to adhere to the attendance requirements imposed by external regulatory agencies beyond those stipulated by Delta College that are listed on page 86 of this catalog.

**Address/Dependent Changes:** Notify the Veterans Services Office of any changes in your address.

## More About Military Credit

By providing a copy of your DD 214, you may be awarded two physical education (PE) activity credits and one physical education theory (PEH) credit as a result of completing basic training.

Additional college credit for military training/experience may also be granted. If you wish to have additional credit, submit copies of certificates and other supporting documents to the Veterans Services Office. The documents will be prepared and submitted to the Records and Registration Office for official evaluation. Written confirmation of credit awarded will be mailed to you.

## An Employer's Opinion

*"We have hired Delta students both as permanent employees and as Co-op students. These employees have brought excellent skills and abilities, as well as a positive attitude and strong work ethic. They are prepared for the business world, learn rapidly, and begin to contribute to our bottom line in a very short period of time."*

Ms. Kim Morris, Human Resources Supervisor • Consumers Power Company • 2400 Weiss • Saginaw, MI



# Steps to Success Process

As a new Delta student, your goal and ours is your success. We know through experience that if we can help you get off to a good start, you are more likely to be successful in reaching your goals. The Steps to Success Process is designed to help you get that good start. You only participate in Steps to Success once as a new student. After gaining some Delta academic credits, you may register by telephone.

## Step 1: Apply for Admission and Financial Aid

You can obtain an Admission Application from area high schools and agencies, and our Admissions Office. Be sure to have official copies of your transcripts (high school/college/G.E.D.) sent to the Admissions Office.

If you are planning to apply for financial aid and you haven't already completed the federal financial aid form, begin the process **now**. Complete the Free Application for Federal Student Aid (FAFSA), which has no application fee. Mail your completed FAFSA in the envelope provided to the federal government's Processing Center. You will receive back a Student Aid Report (SAR) which you must sign and return **immediately** to Delta's Office of Financial Aid. You also need to complete a Delta College Application for Financial Aid.

## Step 2: Complete Assessment

Assessment is not a test which you pass or fail. It is a process to help us identify your current skill levels in English, reading and math. Your Assessment scores, as well as other skill indicators, will help you and your Delta counselor select the right beginning courses for you. Sessions are held both on and off-Campus, mornings, afternoons, evenings and occasionally Saturdays. Sessions last two to two and one-half hours.

## Step 3: Attend Orientation/Advisement

You will learn more about our programs of study, courses, and services designed for your success. You will meet your counselor, discuss your Assessment results, and receive assistance in making a tentative class schedule. You will receive materials including a catalog and a schedule of academic courses. You will also receive a special registration permit with your date and time to register. Orientation sessions are offered mornings, afternoons, and evenings. Sessions last three and one-half to four hours.

**Financial Aid Applicants Note:** You should complete Steps 2 and 3 above even if you have **not** received your SAR back from the federal government's Processing Center. Remember to **sign and return your SAR** to Delta's Office of Financial Aid **immediately** upon receiving it.

## Step 4: Register and Enroll in Courses

The earlier you complete Steps 1, 2, and 3, the sooner you can register. This means a better selection of courses should be available. At registration, you officially enroll in courses, pay your tuition and fees, validate your I.D. Card, and receive a copy of your class schedule. If you have a permit, you can usually complete registration in an hour. Purchasing of books can be done in our College Bookstore.

**Financial Aid Applicants Note:** If you have **received your Award Letter** from Delta's Office of Financial Aid, you may charge your tuition, fees, and books **up to the amount** you were awarded.

## Step 5: Successful Completion of Courses

Success is defined by you and there are as many definitions of success as there are Delta students. Completing the courses in which you enroll, however, is a major key to success.

A few common success goals of Delta students include:

- Earning an Associate degree or Certificate
- Updating job skills
- Transferring to a four-year college or university
- Obtaining a new or better job
- Learning for personal enjoyment or enrichment
- Learning a new skill

**Exemptions** for Assessment and Orientation (Steps 2 and 3) will be given only for the following reasons:

- You enrolled at Delta College Fall Semester 1986 or earlier and earned one or more academic credits.
- You are enrolling in five or less credits per semester (three or less credits per Spring/Summer Session) excluding **all** English, business communications, business computation, and math courses.
- You have earned an Associate degree or higher from a regionally accredited college. An official copy of your final transcript or diploma must be sent to the Delta College Admissions Office.
- You are a transfer student who has successfully completed at least 12 credits with a minimum 2.0 GPA, including English composition and math courses equivalent to Delta College courses ENG 111 or OSE 151, and MTH 100 or higher. An official copy of your final college transcript must be sent to the Delta College Admissions Office.
- You are a Guest student from another college. A completed official Guest Application Form is required from your current college or university.
- You plan to enroll solely in an English as a Second Language course. Assessment and Orientation (Steps 2 and 3) must be taken upon completion of your ESL course.

Students who have the necessary documentation for exemption should contact the Delta College Admissions Office to request exemption status.



# Registration

Registration at Delta generally takes place three times a year, starting in mid-July for the Fall Semester, starting in mid-November for the Winter Semester, and starting in mid-April for the Spring/Summer Semester.

## The Registration Process

Any student - new, returning, readmitted, approved transfer, and approved guest - may register by telephone.

- As a new student, you will be assisted with phone registration during your orientation session.
- As a returning student with 30 or more credits, you will register by telephone according to the number of credits you have completed at Delta plus up to a maximum of 38 transfer credits.
- As a returning student with 29 or fewer credits, you will register by telephone alphabetically according to the first few letters of your last name. The alphabet is rotated each semester for equal access.
- If you are designated an official Guest or transfer student by the Admissions Office, you will register by telephone alphabetically according to the first few letters of your last name.

Each semester, open and late registration periods are held on the Campus for any student who has missed the above registration opportunities.

You are expected to register during the official registration periods. You may register after the completion of the official registration periods but before the midpoint of a course with the written permission of the instructor. You may not register past the midpoint for any course. Effective with the Fall Semester 1992, it is College policy that if you have financial obligations to Delta College, you will not be allowed to register until the obligations have been paid or cleared.

For detailed information regarding phone and Campus registration, you should consult the Schedule of Academic Classes booklet, which is published each semester and available in the Records and Registration Office, the Counseling Center, and the Admissions Office prior to the start of each registration period.

**Cancelled Courses:** The College reserves the right to cancel any course which does not have a sufficient enrollment of students to warrant its continuation. You should attempt to add another course or apply for a refund either at registration or at the Records and Registration Office. You may also request a refund by phone or letter to the Records and Registration Office.

**Course Schedule Changes:** You are expected to complete the courses in which you are registered. If a change is necessary, you must file an add/drop form either at registration or at the Records and Registration Office, or send a letter to the Records and Registration Office requesting the drop or withdrawal. The date this form is processed or the postmark on the envelope is the official add/drop date for the course.

**Added Courses:** In general, you may add courses through the first five instructional days of a semester or first three instructional days of a 7 1/2 week session. Courses added after these days require written permission of the instructor. You may not register past midpoint of any course.

**Student-Initiated Drops:** For courses officially dropped within the first 11 calendar days of a regular semester or within the first five calendar days of an abbreviated session, no grade will be reported or recorded on the official College transcript. If the course is officially dropped from the 12th calendar day through mid-course, you will receive a grade of "W."

When an official withdrawal/drop is initiated after mid-course, the grade will be a "WE" (withdrawal failing) or "WP" (passing course work at date of withdrawal/drop). All official withdrawal/drops must be completed prior to the last week of a course.

If you do not officially withdraw/drop after mid-course, the instructor will assign an appropriate final letter grade ("A" through "E") in relation to total course requirements achieved.

**Instructor-Initiated Drops:** An instructor has the option of authorizing a grade of "W" for you if you have missed an excessive number of course hours of instruction or you lack the course prerequisites. This authorization may be initiated through mid-course and reported to the Records and Registration Office.

Upon receipt of an authorization, the Records and Registration Office will notify you in writing of, and the reason for, the drop.

If you wish to appeal an instructor-initiated drop, the contact must be with the course instructor. If necessary, mediation may be requested of the appropriate Division Chair. All appeals must be in writing, signed by you as the person requesting the appeal, and received within one week following notification of the drop.

**Withdrawal from College:** To completely and officially withdraw (drop all courses), you must complete an add/drop form either at registration or at the Records and Registration Office. Withdrawal may also be requested by mail and the postmark on the envelope will be the official withdrawal date used to determine eligibility for tuition refund and grades.

## Course/Credit Load

If you are a full-time student, course load is 12-18 credits in a 15-week semester and 6-9 credits in a 7 1/2-week session. To register for a course load in excess of these limits, you must obtain special permission from a counselor or the Dean of Students before registration. Approval of an excess course load depends upon your previous academic record.



## Tuition and Fees

Tuition and fees must be paid in total at designated times (see Schedule of Academic Classes booklet) each semester or session, and may be paid by cash, check, Visa or MasterCard, or charged to approved financial aid. Tuition is assessed by credit based on your residency status. The per-credit tuition rate for each semester is published in the Schedule of Academic Classes booklet and is subject to change without prior notice by action of the Board of Trustees.

Fees are charged for specific courses. Fee information is listed in the Schedule of Academic Classes booklet and subject to change without prior notice.

If you are a resident of the Delta College district, 60 years of age or older, you may register for courses offered by the College and receive a grant reducing the amount of tuition due by 50%. The grant does not apply to fees (registration, contact hour, high cost, course, etc.), books, supplies, trip costs, or other special fees. The College reserves the right to exempt certain courses or programs from grant eligibility. To be eligible for the Senior Citizen Grant Program, you must have a Delta College identification number. The identification number is issued by the Admissions Office after completing a brief application form, which requires proof of age.

A registration fee of \$15 is charged to each academic student once each semester or session. A registration fee of \$5 is charged to each Community Services student once each semester or session. Students registering in both academic and Community Services courses will pay both registration fees once each semester or session.

**Textbooks and Equipment:** You are required to purchase your own textbooks, supplies, personal attire (i.e., lab coats, clinic shoes, etc. as required by courses), special equipment and tools, and attire and equipment for physical education courses. Most of these items may be purchased at the College Bookstore, which is located in the Commons/Cafeteria area and open during all College registration hours.

## Refund Policy

Tuition and Special Course Fees\*

**100% refund:** through the 7th calendar day\*\* (including Saturday and Sunday) of the semester.

**50% refund:** from the 8th through the 11th calendar day\*\* (including Saturday and Sunday) of the semester.

**No refund:** after the 11th calendar day\*\* (including Saturday and Sunday) of the semester.

Deadlines may fall on a Saturday or Sunday when offices are closed. Students may drop by letter and the postmark will be considered the drop date.

**\*For courses less than four weeks but more than 2 days:**

**100% refund:** through the first quarter of the total days\*\*\* of the course.

**50% refund:** through the second quarter of the total days\*\*\* of the course.

**No refund:** after the second quarter of the course.

**\*For one or two day courses:**

**100% refund:** before the start date of the course.

**No refund:** after course begins.

Courses which have nonrefundable tuition or course fees are noted in the schedule booklet.

\*\*Calendar day is defined as all the days of the week including Saturday and Sunday. The first calendar day is defined as the first day of the semester. For refund purposes, the start date of the course is the first calendar day of the semester, unless noted otherwise in the schedule booklet.

\*\*\*Total days is defined as all the days of the course from the start date to the end date listed in the schedule booklet including Saturdays and Sundays.

### Registration Fee

No refund, unless all courses are cancelled by the College.

### Offset

During the 12th through the 25th day from the official start date of the semester or start date listed in the schedule, students are permitted to offset equal credits and course fees within the same academic discipline (for example, switching from one ENG course to another ENG course, but not from an ENG course to a MTH course) with the written recommendation of their instructors through the add/drop procedure. For credits or fees added in excess of credits dropped, additional tuition and fees must be paid. During this period, grades of "W" will not be assigned to courses dropped through the offset process. Offset cannot be done between sessions (for example, dropping an ENG course during the first 7 1/2 week session and adding an ENG course during the second 7 1/2 week session or dropping a MTH course during the Spring 7 1/2 week session and adding a MTH course during the Summer 7 1/2 week session).

### Financial Aid Recipients

For students receiving financial aid, refunds are returned in the following order: to Federal Loan Programs, to Federal Pell Grant, to Federal SEOG, to other Title IV (federal) aid programs, to State of Michigan Programs, and to the student.

Students receiving financial aid who completely withdraw and are first-time, first-semester students at Delta, including transfer students, see the Finance Office for details of pro rata refund.

### Special Refund Consideration

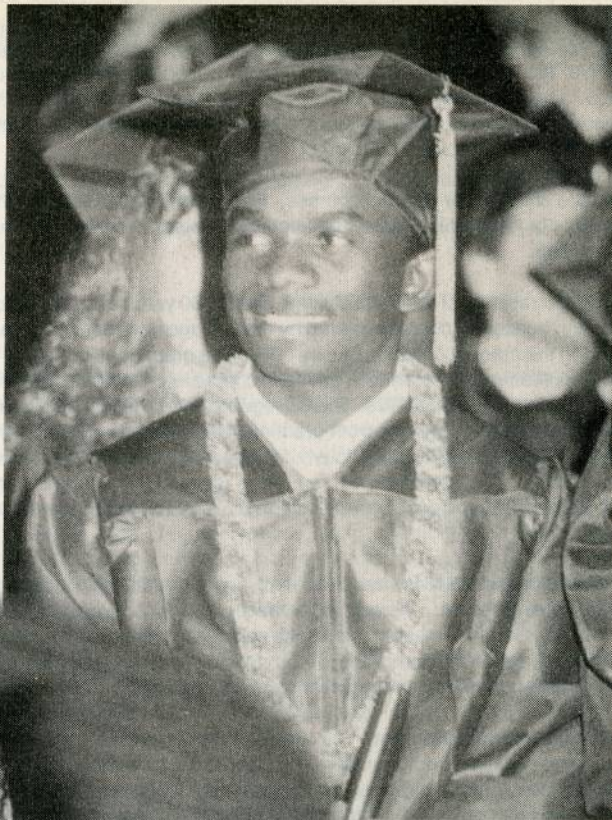
Such consideration by the Vice President of Student Services is available for drops due to medical reasons or death by submitting a medical statement to the Records & Registration Office.

## "Counselor's Quote"

*C. Gary Martinez: Buena Vista High School*

*"If you want the best beginning in your area of study dollar for dollar, Delta is your best investment."*







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# PROGRAMS

## OF

# STUDY

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1. Transfer Programs
2. Transfer Procedures
3. Academic Occupational Programs  
    Certificates and Associate Degrees
4. Health Program Procedures
5. Academic Occupational Program Guides
6. Non-Degree Programs and Activities



# TRANSFER PROGRAMS

Code	Program Title	Associate in Arts Degree	Associate in Science Degree
174	Agriculture		X
873	Architecture, Pre		X
382	Art Majors	X	
797	Aviation, Pre		X
422	Biology Majors		X
423	Biotechnology, Pre		X
180	Business Administration	X	
464	Chemical Technology		X
462	Chemistry Majors		X
410	Computer Science	X	X
424	Conservation		X
144	Data Processing	X	
516	Dentistry, Pre		X
582	Dietetics, Pre	X	X
383	Drama	X	
482	Economics	X	
342	Education, Art	X	
346	Education, Business	X	
350	Education, Elementary	X	
358	Education, Industrial Arts	X	
362	Education, Music	X	
363	Education, Physical	X	
364	Education, Pre-School	X	
366	Education, Secondary	X	X
368	Education, Special	X	
816	Engineering, Pre		X
318	English	X	
465	Environmental Science, Pre		X
320	Foreign Language Majors	X	
426	Forestry		X
484	Geography	X	X
472	Geology	X	X
485	History	X	
354	Home Economics	X	X
492	International Studies	X	
323	Journalism	X	
729	Law, Pre	X	X



## TRANSFER PROGRAMS (CONTINUED)

Code	Program Title	Associate in Arts Degree	Associate in Science Degree
390	Liberal Arts	X	X
414	Mathematics		X
538	Medical Technology, Pre		X
532	Medicine, Pre		X
430	Mortuary Science, Pre		X
394	Music Majors	X	
428	Natural Resources		X
561	Nursing, Pre (BSN)	X	X
572	Occupational Therapy, Pre	X	X
540	Optometry, Pre		X
542	Osteopathy, Pre		X
586	Pharmacy, Pre		X
487	Philosophy	X	
576	Physical Therapy, Pre		X
488	Political Science	X	
190	Psychology	X	
774	Social Work	X	
496	Sociology	X	
326	Speech	X	
398	Theater	X	
432	Veterinary Medicine, Pre		X

### “Counselor’s Quote”

*Richard Mosier: Western High School*

*“We are happy to have a school like Delta in our community. With their high academic standards and ease in transferring to a four year institution they are known as an excellent community college. Regardless of their program of choice, students leave Delta College well prepared for their last two years. In 38 years of teaching I’ve found that Delta is a great place all around.”*



# Transfer Programs

## TRANSFER MISSION STATEMENT

To facilitate a seamless transition of students and course credits toward degree completion, Delta College is committed to providing academic programs, support services and formal articulation processes for students transferring to or from other accredited institutions.

Delta College is an excellent choice for students planning to earn a Baccalaureate (Bachelor's) degree. While enrolled at Delta in a transfer degree program, you will enjoy these benefits:

- A Campus that is convenient to your home and job.
- Costs that are well below four-year colleges and universities.
- Classes that are small and interactive.
- Faculty who are sincerely concerned about your success and available to provide individual assistance.
- Personal student services and academic advising that will support your career decision-making and educational needs.
- Transfer courses that are recognized by respected colleges and universities throughout the United States.
- Time to establish firm career goals and adjust to college-level studies.
- Opportunity to refine your academic abilities and improve reading, composition, mathematics and study skills.

Be assured that Delta's Associate in Arts and Associate in Science Degree Programs provide you with a solid academic foundation required for success at your chosen four-year college or university.

Basically, Delta College provides the first half (freshman and sophomore years) of most Baccalaureate degree programs. After completing your Associate in Arts or Associate in Science Degree at Delta College, you will in most cases be qualified to transfer to complete the second half (junior and senior years) of the Baccalaureate degree if you have planned carefully, followed the academic advising provided by Delta counselors, and successfully completed the required courses at the minimum grade level stated by the four-year college or university. It is particularly important for you, as a transfer student, to choose your four-year school in your freshman year because the preparation needed at Delta College to enter one transfer college may be different from the preparation and admission requirements at another school. Professional counselors are available at Delta College to assist you in choosing your college or university and in planning your transfer program to fit that school.

Detailed program guidesheets, listing suggested Delta courses and providing career information and admission specifics, are available from the Counseling Center for the transfer programs listed on the chart on page 22. Other transfer programs (not listed by title on the chart) can be individually developed with a Delta counselor. Also, with the addition of some courses, almost any Delta College Occupational Associate in Business Studies Degree or Associate in Applied Science Degree may be utilized in part toward fulfilling a portion of a Baccalaureate degree. Transferability of these occupational programs and courses depends primarily upon the major area of study in the Baccalaureate degree and the senior college of choice.

## MACRAO Articulation Agreement with Senior Colleges

The Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Articulation Agreement was established to improve transfer student articulation between two-year and four-year colleges and universities in Michigan. Delta College is a participant in this MACRAO Agreement with the following four-year institutions:

- |  |                                     |
|--|-------------------------------------|
| * Adrian College                         | * Kalamazoo College                 |
| * Albion College                         | * Lake Superior State University    |
| * Alma College                           | * Lawrence Technological University |
| * Aquinas College                        | * Madonna College                   |
| * Baker College                          | * Michigan State University         |
| * Calvin College                         | * Michigan Technological University |
| * Central Michigan University            | * Northern Michigan University      |
| * Cleary College                         | * Northwood University              |
| * Detroit College of Business            | * Oakland University                |
| * Eastern Michigan University            | * Olivet College                    |
| * Ferris State University                | * Saginaw Valley State University   |
| * GMI Engineering & Management Institute | * Siena Heights College             |
| * Grand Valley State University          | * Spring Arbor College              |
| * Hope College                           | * Western Michigan University       |

\* Indicates four-year colleges and universities which have attached provisions to their Agreements. Usually these can be satisfied after transferring. These provisions can be obtained from the four-year institution.

This Agreement provides that if you complete either the Associate in Arts Degree or the Associate in Science Degree, or all of the following requirements at Delta College and are accepted as a transfer student by one of the above schools, you will have satisfied the basic general education requirements of that four-year school. The MACRAO Articulation Agreement does not guarantee admission into a particular college or into any particular program at that college. This Agreement applies to basic studies/general education and does not exempt the transferring student from meeting specific requirements for a particular program or program of study; i.e., education, engineering, business, social work. Acceptable courses are specified under the Associate in Arts and Associate in Science Degree Requirements on page 86. The specific requirements of the MACRAO Agreement are:

- |  |                    |
|--|--------------------|
| 1. English Composition   | 6 Semester Credits |
| 2. Humanities<br>(in at least two subject areas)   | 8 Semester Credits |
| 3. Social Sciences<br>(in at least two subject areas)  | 8 Semester Credits |
| 4. Natural Sciences<br>(in at least two subject areas; must include at least one lab course) | 8 Semester Credits |

Transcripts of Associate in Arts or Associate in Science Degree graduates will automatically indicate that MACRAO Agreement requirements were fulfilled. Non-graduates must request the Records and Registration Office to have the MACRAO Agreement put on their official transcripts if requirements were fulfilled.



## Transferability of Delta Courses

Based upon information provided to Delta College from the major public Michigan four-year universities and Northwood University, Delta's counseling staff has developed a composite listing that provides specific course equivalency information about how Delta College courses will transfer. The transferability of courses between colleges depends basically upon:

1. The school into which you transfer.
2. Your program of study (program, or more specifically, the major and/or major and minors you are seeking).
3. The grade you receive in the course.
4. Whether or not the transfer college has an equivalent (same) course and if so, the number of credits acceptable for their course.
5. The level of the course (an intermediate algebra course may be acceptable for one program, but not for others that require higher levels of mathematics).

Delta College has liaison relationships with many four-year colleges and universities regarding their transfer requirements and program recommendations; however, if you wish to transfer credits from Delta to another school, it is your responsibility to be aware of that institution's transfer policies and program requirements.

There is a limit to the number of credits you may transfer into a four-year college or university. Generally, this is 62 credits or half the total number of credits required for the Baccalaureate degree.

You can review in the Counseling Center a printed copy of how your Delta courses should be accepted at the college into which you are transferring. Michigan universities for which transfer course information is available are: Central Michigan University, Eastern Michigan University, Ferris State University, Grand Valley State University, Lake Superior State University, Michigan State University, Michigan Technological University, Northern Michigan University, Northwood University, Oakland University, Saginaw Valley State University, University of Michigan-Ann Arbor, University of Michigan-Flint, and Western Michigan University.

You should maintain close contact with your counselor for all possible assistance in registering for the proper courses and maintaining the necessary level of academic performance. While Delta College will make every effort to give proper guidance, you are responsible for your own choices and for developing your own educational plan.

## Transfer Procedures

### Evaluating Colleges

Transferring from one college to another is very common, but to make it a positive experience, you are encouraged to investigate four-year colleges and universities and their degree requirements; plan ahead; and work closely with your Delta College counselor, especially in selecting the correct courses for your transfer program. Discussed below are several important things to think about as you start evaluating various colleges and universities.

The **academic climate** of the institution should definitely be explored. Compare your background and abilities with those of the present students at that particular college or university. The transfer institution's admissions staff and your Delta counselor can be very helpful in this regard. They are aware of the institution's selection criteria and how well previous Delta graduates have done. You should read carefully each institution's statement on admissions requirements to be certain you can meet them.

The **program offerings** of the various institutions need to be considered in your decision-making process. If you are interested in a specific field of study, you should look first at colleges and universities offering recognized and accredited programs in that area.

There are **non-academic factors** to consider also in making your college or university choice. How large is the student body? Is campus housing available? What is the nature of the community in which the school is located and how far is it from home? Does the institution provide the environment and opportunity for the types of extracurricular activities that you enjoy (e.g., sports, arts, student government)? Where and what types of jobs are their graduates getting and what type of placement services do they provide? Be sure to get answers to questions like these through visits to the campus, by looking at the catalog, or by talking to current students at the school. This information can help you choose an institution that fits your personal interests.

Your investigation should also include a thorough review of the **cost** of the college or university being considered. Usually the basic educational expenses of the institutions for an academic year can be determined from their current catalog. Then add on amounts for such items as personal expenses and room and board to come to a total that will realistically reflect your overall costs.

Last, but certainly not least, are the respective **application procedures for admission and financial aid**. You must submit all required admissions forms correctly and on time if you expect full consideration. You must also submit all financial aid forms correctly and on time. The schools often make their decisions about admission and financial aid soon after the deadline. They must decide on the basis of the material that they have in hand, so it is to your advantage to be prompt and accurate. All Michigan four-year institutions charge an admissions application fee and all have specific deadline dates by which your application and other necessary credentials (required test scores, high school and college transcripts) must be received.

### "Counselor's Quote"

*Allan Thiel: John Glenn High School*

*"The combination of vocational programs with an excellent transfer program makes me very willing to recommend Delta to students."*



## Transfer Degree Requirements

Each institution of higher education has its own requirements for admission, majors, general education, and so on. These requirements are stated in the college's official catalog or bulletin. Usually credits are defined as semester hours but some colleges and universities use the term 'or quarter hour system. To earn a Bachelor's degree, you will generally be required to fulfill the following:

- **General Education requirements.** Minimum number of credits earned in each of certain broad groups of courses, such as the humanities, the social sciences, the physical or natural sciences, and mathematics. Some institutions refer to these as distribution or core requirements.
- **Level requirements.** Minimum number of credits earned in courses on such levels as introductory, intermediate, and advanced, or in specific numbered levels of courses such as 300 and 400, commonly referred to as junior and senior-level courses.
- **Major or concentration requirements.** Minimum number of credits earned in a subject area of specialization (i.e., English, chemistry, business administration) for the degree. About one-fourth of the total number of credits required for a degree must be in the major or field of concentration.
- **Minor requirements.** Minimum number of credits earned in a second subject of concentration/specialization. Generally the number of credits required is about half to two-thirds required for a major. Not all degrees require you to declare a minor.
- **Residence requirements.** Minimum number of credits earned in attendance at the institution which is granting the degree (as opposed to transfer credits earned at another school).
- **Elective requirements.** Minimum number of credits earned in optional courses that the student chooses.
- **Grade requirements.** Minimum cumulative grade point average of grades earned in all courses taken and often, in all courses taken in the major and/or minor. Some colleges and universities also require a minimum grade in specific courses.
- **Specific subject requirements.** Examples include: freshman-level English composition; two or more courses in physical education; two years of foreign language courses or a minimum level of proficiency in a foreign language as demonstrated on a specified examination; and computer literacy.
- **Credit requirements.** Minimum number of credits, typically 120 to 130 semester credits for a Bachelor's degree.

## Transfer Procedures Checklist

It is important that you select as early as possible the institution to which you plan to transfer because schools differ markedly as to curricula offered and their corresponding requirements. If you plan to attend another college or university after the completion of your sophomore year at Delta College, you should:

- Seek academic advising from a Delta counselor so you will enroll in courses that best fit your needs, achievement level, program, and transfer institution requirements.
- Obtain a transfer college/university guidesheet and a program guidesheet from Delta's Counseling Center. Together, these two guidesheets will provide most of the basic information you will need to make the best decisions about both your career choice and transfer school.
- Visit transfer school campuses and make a list of questions in advance to use when you visit their Admissions Offices or other departments. Schedule appointments in advance if you would like a campus tour, want to visit a residence hall, or want to talk with specific personnel.
- Apply for transfer admission well in advance (almost a year) of the anticipated date of transfer. Admission application forms for most Michigan public and some Michigan private senior institutions are available in Delta's Counseling Center.
- Review the official catalog of your transfer college/university of choice. Current Michigan catalogs of many institutions are available for use in the Delta Counseling Center.
- If you served in the military, obtain and send an official copy of your record (DD214 form).
- Confer with transfer institutions admissions personnel who visit Delta annually (some twice a year). Times, dates, and places are posted in the glass case near the Counseling Center entrance and announcements regarding these visits are printed in the weekly Bulletin.
- Request that each college or university you have attended send an official transcript of your courses and grades. Schools usually charge a small fee and you must request these transcripts yourself, in person or in writing, since your signature must be provided. Transcripts will only be acceptable if they are mailed directly by the school and if they have the official seal/signature. Delta transcripts are requested from the Records and Registration Office.
- If required, copies of appropriate test scores (usually ACT or SAT scores) and your high school transcript should be sent. Usually this is only required if you have completed less than 24 to 30 transferable credits. This information is usually detailed in the transfer admission application directions.
- Complete the appropriate financial aid application materials early if you plan to apply for grants, loans, or scholarships. You must also request that each previous institution attended mail a financial aid transcript regardless of whether or not you ever applied for financial aid from that school. These financial aid transcripts are **not** the same as your academic transcript which contains courses and grades. They are requested from financial aid offices and there is no charge.



# Academic Occupational Programs

	Program Code	Associate in Business Studies	Associate in Applied Science	Certificate	Page Number
Accounting .....	172	X			30
Agricultural Enterprise .....	178	X			30
Applied Sacred Music (see Music) .....					
Architectural Technology .....	872		X		32
Automotive Service Educational Program (GM) .....	842		X		32
Automotive Service Technology .....	844/845		X	X	33
Aviation Flight Technology .....	795/796		X	X	34
Broadcasting & Telecommunications:					
Radio .....	314		X		35
Television .....	315		X		35
Chemical Technology ** .....	464				36
Child Development .....	762/763		X	X	37
Clothing Specialist .....	204/205	X		X	38
Computer Aided Drafting .....	865			X	38
Computer Information Systems:					
Accounting .....	133	X			39
Computer Application Specialist .....	135/136	X		X	39
Programming .....	137	X			39
Computer Marketing .....	140/141	X		X	40
Computer Numerical Control Technology .....	862/863		X	X	41
Construction Management .....	875		X		42
Criminal Justice:					
Basic Police Training Certification Track .....	725		X		43
Corrections .....	726		X		43
Law Enforcement .....	727		X		43
Custom Tailoring and Alterations .....	207			X	44
Dental Assisting .....	510/512		X	X	45
Dental Hygiene .....	514		X		46
Dual Degrees (Business & Allied Health):					
Dental Assisting/General Management .....	518	X	X		47
Dental Hygiene/General Management .....	519	X	X		47
Nursing/General Management .....	569	X	X		47
Physical Therapist Asst/General Management .....	575	X	X		47
Radiography/General Management .....	546	X	X		47
Respiratory Care/General Management .....	578	X	X		47
Surgical Technology/General Management .....	550	X	X		47
Electronic Engineering Technology .....	812		X		48
Electronic Service Technology .....	814			X	48
Environmental Science/Hazardous Materials Tech .....	466/467		X	X	49
Fashion Merchandising .....	212	X			50
Financial Institutional Management:					
Banking Management .....	242	X			50
Credit Union Management .....	244	X			50
Fire Science:					
Fire Fighter Technician .....	736		X		51
Fire Investigation/Prevention .....	734		X		51
Fire Science Technology .....	731		X		51
EMT .....	732		X		51
Industrial/Commercial Security & Safety .....	733		X		51
Leadership & Training .....	735		X		51
Graphic Arts Technology .....	867/868		X	X	52
Industrial Supervision .....	879		X		53
In-Home Edu-Care Specialist .....	769/770		X	X	54
Interior Design .....	216	X			55
International Studies .....	493			X	56
Legal Assistant .....	282/283	X		X	57
Machine Tool Operations:					
Industrial Supervision .....	881		X		58
Machine Tool Operations .....	883/885		X	X	58
Management:					
General Management .....	254	X			59
Marketing Management .....	256	X			59
Office Services Management .....	258	X			59
Retail Management .....	260	X			59
Small Business Management .....	262/263	X		X	59
Management/Subsequent Degrees					
Business Management .....	254	X			60
Northwood 3 + 1 .....	005	X			60
Mechanical Design Technology .....	820		X		61



## Academic Occupational Programs

	Program Code	Associate in Business Studies	Associate in Applied Science	Certificate	Page Number
Mechanical Engineering Technology .....	822		X		61
Medical Assisting .....	533		X		62
Medical Secretary .....	288	X			62
Music, Applied Sacred .....	396			X	31
Nursing (ADN) .....	560		X		63
Nursing (Transition) .....	560		X		64
Office Clerk .....	290			X	65
Office Professional:					
Accounting .....	292	X			66
Desktop/Multimedia Publishing .....	295	X			66
Information Processing .....	145/146	X		X	66
Legal .....	293	X			66
Physical Therapist Assistant .....	574		X		67
Practical Nurse (PN) .....	563			X	68
Radiography .....	544		X		69
Real Estate .....	185	X			70
Refrigeration/Heating/Air Conditioning Technology .....	888			X	70
Residential Construction .....	887/889		X	X	71
Respiratory Care .....	577		X		72
Skilled Trades .....	891		X		73
Surgical Technology .....	548/547		X	X	76
Water/Wastewater Treatment Technology .....	827		X		77
Welding Technology .....	897		X		77

\*\* Associate in Science Degree

Many courses in these Programs have prerequisites. See Section VI, Course Descriptions for prerequisite information.

## Academic Occupational Programs Certificates and Associate Degrees

Many educational programs offered at Delta College are designed to prepare you for immediate employment in the job market. These occupational curricula provide you with the necessary skills and knowledge required for entry-level positions in career fields. In addition, most programs are diversified sufficiently to create some social and economic awareness. Attending full-time, you can complete most Certificate programs in one year and the majority of Associate degree programs in two years.

Most occupational programs are not specifically designed for transfer purposes to Baccalaureate degree-granting institutions. Transfer of all credits earned should not be expected.

In some programs, credits earned in an occupational program may be transferable into a Baccalaureate degree program at a four-year college or university; however, these programs are not designed specifically to parallel the first two years of university study. You should consult with your Delta counselor and the Admissions Office of the college or university into which you wish to transfer.

### Terms Used in this Section

**Certificate Option:** A Certificate is awarded for the completion of various one-year occupational/technical curricula. Most Certificates prepare you for specific jobs or aspects of a job. Some Certificates are part of an Associate degree program, in which case the credit earned in the Certificate may be used toward the Associate degree.

**Applied Associate Degree:** The degree is broader in scope than the Certificate and includes a varying number of General Education and support courses.

**Suggested Sequence:** The order in which you should take your courses is suggested so that they will be of the most benefit to you. The sequence is indicated by blank and black boxes following each course title required for that program. You are responsible for checking course prerequisites prior to enrollment. In most cases the sequential arrangement is not mandatory. If it does not fit your needs, see your counselor or program coordinator.

**Electives:** These are courses applicable toward a degree or Certificate which may be chosen to meet your individual interests and needs.



# Health Program Procedures

## Clinical Application and Validation

1. Complete **all** prerequisite courses as specified in this catalog. This means transfer credit, waivers processed, and incomplete course work ("I" grades) completed must be posted on your transcript **prior** to application for validation.
2. Obtain from the Records and Registration Office or the Counseling Center the Validation Application for Health Clinical Programs Form. **You may be validated and eligible for one program only.**
3. Complete the Validation Application Form and **submit the completed Form to the Records and Registration Office.** These Forms may be submitted from mid-term to the end of the semester in which you will complete your prerequisites.
4. Records and Registration Office personnel will accept and date your completed Validation Application Form.
5. Validation Application Forms will be validated **only** by Records and Registration Office staff and processed no later than 30 days after the application deadline.
  - a. Qualified students will be assigned a semester and year of validation which will be entered into the student's computer record (e.g., F93 or W94 or S94).
  - b. Nonqualified students must submit another Validation Application Form **after successfully completing** all required prerequisites and other qualifications.
6. The semester and year of validation will be valid for three years. After that time, a new Validation Application must be submitted prior to attempting to register for the clinical sequence. You must have successfully completed all prerequisites/qualifications required at the time the new Application is submitted. Should you not register within the three-year period, it may be necessary to retake some prerequisite courses.

**Note:** Delta College reserves the right to modify validation and registration procedures for programs with low numbers of validated students at the end of the Winter Semester.

## Clinical Registration - First Semester

1. A special telephone registration will be held for first semester clinical courses in the Allied Health and Nursing Programs. Check each semester's Schedule of Academic Classes booklet for the special phone-in registration dates, times, and offerings. Special registrations are usually held in May/June for Fall semester, November for Winter semester, and April for Spring semester. Other than Nursing, all health programs normally start in the Fall semester only.
2. Special phone registration will specify your registration priority according to program **and** semester and year of validation. Once the clinical courses are full, an alternate list of qualified students will be developed to include those students who phoned in when specified.

**Note: The alternate list is valid only for the semester. The registration alternate list will not be carried over to the next registration.**
3. After completion of the special telephone registration, registered students will be required to attend clinical orientation sessions. Alternates may be invited to these sessions. Dates and times for orientations are listed in the Schedule of Academic Classes booklet.
4. Students not making payment by the due date (same as the first due date specified in the Schedule of Academic Classes booklet for all other students participating in phone registration) or voluntarily cancelling will be deleted from courses.
5. Open positions that result from the above deletions or cancellations in first semester clinical courses will be filled by students on the registration alternate list. Students who drop after the first week of classes will lose their validation and must resubmit a new Validation Application Form.
6. Students are responsible for completing all clinical courses and requirements in effect on the day the clinical sequence begins.

**Note:** Individual faculty cannot add to published course capacity by accepting first-time enrolled students as overloads. Repeat students will be admitted in compliance with program re-entry procedures.

## An Employer's Opinion

*"I feel that Delta is our main source for highly trained people in many areas, including Nursing, Physical Therapy Assistant, and Surgical Technology. We also employ graduates as Paramedics, Health Unit Coordinators, Radiography Technicians and other areas. Our connection with Delta College and its graduates is highly valued."*

Ms. Lois Horstman, BSRN • Bay Medical Center, Recruiter, Human Resources  
300 Mulholland • Bay City, MI



# Academic Occupational Program Guides

## ACCOUNTING

### Associate in Business Studies Degree

As a graduate of Delta's Accounting associate degree program, you will have the skills to be an accounting assistant. Complexity of the work will vary with the size and volume of the employee's activities and the firm's procedures. Most starting jobs will involve tasks such as: keeping records of day-to-day business transactions; making entries in account ledgers; monitoring cash receipts and disbursements; processing appropriate budgetary costing procedures; and preparing materials needed for financial reports. As you gain experience, you may assume more accounting responsibilities which could involve analyzing financial reports and advising management.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
PSY 101 Applied Psychology OR		
SPH 112 Fundamentals of Oral Communication OR		
SPH 114 Interpersonal Communications .....	■ ■ ■ ■	3
--- --- General Electives .....	■ ■ ■ ■	5/6
SUBTOTAL		14/15

#### Business Courses

* ACC 211 Principles of Accounting I .....	■ □ □ □	4
* ACC 212 Principles of Accounting II .....	□ □ □ □	4
* ACC 214 Microcomputer Accounting Applications .....	□ □ □ □	4
* ACC 215 Federal Tax Accounting OR		
ACC 115 Applied Tax - H & R Block .....	□ □ □ ■	3/5
* ACC 223 Accounting Practices/Working Capital .....	□ □ □ ■	4
* ACC 224 Accounting Practices/Long Term .....	□ □ □ ■	4
* ACC 233 Cost Accounting .....	□ □ □ ■	3
* CIS 133 Introduction to Computer Information Systems .....	■ □ □ □	4
ECN 221 Principles of Economics I .....	□ □ □ ■	4
GB 153 Introduction to Business .....	■ □ □ □	3
GB 251 Business Law I .....	□ □ □ ■	3
* OSE 151 Business Communications I .....	■ □ □ □	3
* OSE 152 Business Communications II .....	□ □ □ □	3
OSE 170 Keyboarding I: Keyboard .....	■ □ □ □	2
SUBTOTAL		48/50

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. ACC 211 prerequisite: one year of high school algebra or MTH 107. May be taken concurrently.
- 2. Proficiency examinations are available for OSE 170. Typewriting may be waived and another course substituted.
- 3. If you are planning to transfer to Northwood University you should select ACC 227 (Intermediate Accounting I) and ACC 228 (Intermediate Accounting II). Northwood does not accept ACC 115.
- 4. The above program is intended to prepare you for a career upon graduation from Delta College. If you plan to transfer to a four-year college, you should use a Business Administration program guidesheet and consult a counselor.
- 5. See page 91 for graduation requirements.
- 6. Delta College reserves the right to modify program requirements.

## AGRICULTURAL ENTERPRISE

### Associate in Business Studies Degree

As a farmer, you know that more than almost any other occupation, the American farmer of today is directly affected by national and world events. The governments of the world, their policies and technologies, America's relative economic conditions, world weather conditions, all of these impact the demand and price for your products and ultimate well-being. To compete in national and world markets, there is a need to understand the complex conditions which shape those markets. You must constantly seek improvements in your own operation in order to become more efficient. You need to operate within a narrow range with rising costs of supplies and services on the one hand and global competitive pressures to keep prices for your produce down on the other. This program was developed with the part-time student in mind. It may not be possible to complete the AGR courses within two years.

	Suggested Sequence	Sem Hrs
<b>Business Courses</b>		
ECN 221 Principles of Economics I .....	□ □ □ □	4
GB 110 Business Math .....	■ □ □ □	3
1. OSE 151 Business Communications I .....	■ □ □ □	3
1. OSE 152 Business Communications II .....	□ □ □ □	3
PE --- Physical Education Activity .....	■ □ □ ■	1
PE --- Physical Education Activity .....	■ □ □ ■	1
POL 103 Introduction to American Government .....	■ □ □ ■	3
SUBTOTAL		18

#### Basic Program Requirements

AGR 140 Farm Business Management OR		
AGR 160 Agribusiness Management .....	■ □ □ □	2
AGR 150 Agricultural Computers I .....	□ □ □ □	2
AGR 151 Agricultural Computers II .....	□ □ □ □	2
AGR 185 Plant Science I .....	□ □ □ □	2
AGR 186 Plant Science II .....	□ □ □ □	2
AGR 187 Plant Science III .....	□ □ □ ■	2
AGR 205 Agricultural Marketing I .....	□ □ □ □	3
AGR 208 Futures Market/Technical Analysis .....	□ □ □ □	1
AGR 210 Agricultural Finance .....	■ □ □ □	3
AGR 215 Agribusiness Law .....	□ □ □ □	2
AGR 218 Agriculture & the Environment .....	□ □ □ ■	2
AGR 220 Fundamentals of Soil Science .....	□ □ □ □	2
SUBTOTAL		25

AGR --- Agriculture Electives (see list below) .....	□ □ □ ■	8
--- --- General Electives .....	□ □ □ ■	11
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

#### Agriculture Electives may be chosen from the following:

AGR 190 Equine Management .....	■ □ □ □	2
AGR 206 Agricultural Marketing II .....	□ □ □ □	3
AGR 232 Dry Beans and Sugar Beets .....	■ □ □ □	1
AGR 240 Woody Plant Identification I .....	□ □ □ □	3
AGR 241 Woody Plant Identification II .....	□ □ □ □	3
AGR 243 Tree Maintenance .....	□ □ □ ■	3
3 AGR Documented work experience .....	■ ■ ■ ■	1-6

#### NOTATIONS:

- 1. If you are planning to transfer to another institution, you may substitute ENG 111 and 112 for OSE 151 and 152.
- 2. If you are planning to transfer to a Baccalaureate degree program, you should consult with the counselor to select appropriate Social Science, Natural Science, and Humanities classes.
- 3. Your work experience will be reviewed by a team of experts from the AGR Advisory Committee. Final approval by the AGR Program Coordinator.
- 4. Workshops and seminars have to be conducted by the County Extension Service and County AGR Extension Agents decide whether the workshop or seminar is worthy of credits. Final approval by AGR Program Coordinator.
- 5. See page 91 for graduation requirements.
- 6. Delta College reserves the right to modify program requirements.



# APPLIED SACRED MUSIC

## Certificate Program

This program provides you the opportunity to learn fundamental musical skills that you will need as a church musician. If you are an organist, choir director, cantor, or guitarist, the 30-credit program will enable you to learn new skills and improve on the skills you already have. The program's flexibility allows for granting some life-experience credit. Credits earned are applicable towards an Associates degree and are transferable to other institutions. The program focuses on practical skills and resources and is non-denominational.

		Suggested Sequence	Sem Hrs
<b>Music Courses</b>			
MUS 100	Elements of Music .....	■ □ □ □	3
MUS 101	Music Theory .....	□ □ ■ □	5
MUS 102	Music Theory .....	□ □ □ ■	5
MUS 117	Music Liturgy .....	□ ■ □ □	1
MUS 131	Piano I .....	■ □ □ □	2
MUS 132	Piano II <b>OR</b>		
MUS 139	Keyboard Practicum .....	□ ■ □ □	2
MUS 138	Music Voice Class .....	□ ■ □ □	2
MUS 145	Elements of Conducting .....	□ □ ■ □	2
MUS 289	ASM Capstone .....	□ □ □ ■	2
MUS ---	Applied Music Courses .....	■ ■ ■ ■	4
#MUS ---	Ensemble I .....	■ □ □ □	1
#MUS ---	Ensemble II .....	□ ■ □ □	1
TOTAL CREDITS REQUIRED FOR CERTIFICATE			30

### # Choose From:

MUS 154	Choir I	1	MUS 255	Choir IV	1
MUS 155	Choir II	1	MUS 256	Jazz Choir III	1
MUS 156	Jazz Choir I	1	MUS 257	Jazz Choir IV	1
MUS 157	Jazz Choir II	1	Outside Ensemble Experience		
MUS 254	Choir III	1			

If you have tested out or received waiver for any of the music courses required you may take classes from those listed below:

CPS 125	Computer Literacy	3	RUS 111	Russian One	4
FR 111	French One	4	SOC 271	Religion and Society	3
GE 111	German One	4	SPA 111	Spanish One	4
MUS 111	Music Appreciation I	3	SPH 112	Fund. of Oral Comm.	3
MUS ---	Applied Music Courses		SPH 114	Interpersonal Comm.	3

### Notations:

- 1) "Test out" option is available for MUS 100 and MUS 131.
- 2) Applied Music courses will be selected in consultation with a member of the Music Department.
- 3) Both Delta Ensemble and others may be used with prior permission from a member of the Music Department.
- 4) MUS 289 is the final class in this program and will require your work to be "judged".
- 5) MUS 145 offered even years only: '96, '98, etc.
- 6) See page 91 for graduation requirements.
- 7) Delta College reserves the right to modify program requirements.



*"I love my job!"*

*"I've taught in a lot of different places and I think that Delta students are the most exciting to work with. The intimate class size allows me to create an atmosphere that makes learning exciting."*

*Delta's outstanding faculty maintain a high level of intellectual stimulation for the students and each other."*

Paul C. Hill,  
Assistant Professor of Music and  
Director of the Delta College Choir,  
has taught at Delta for 6 years



## ARCHITECTURAL TECHNOLOGY

### Associate in Applied Science Degree

As an Architectural Technician, you may assist licensed architects, construction engineers, urban planners and other design personnel in most phases of the development of a building or site projects. This program has an emphasis on job entry skill development for employment in occupations such as: draftsman for installation and shop drawings; building appraiser for financial institutions or real estate firms; estimator or supervisor for contractors; inspector for government agencies.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
ART 111 Drawing I .....	■ □ □ □	3
ART 251 History of Architecture <b>OR</b>		
ART 252 History of American Architecture .....	□ ■ □ □	2
ENG 111 College Composition I .....	■ □ □ □	3
ENG 112 College Composition II <b>OR</b>		
ENG 113 Technical Writing .....	□ ■ □ □	3
MTH --- Mathematics Elective .....	■ ■ □ □	3/4
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government .....	■ ■ ■ ■	3
--- --- Approved Electives (see list below) .....	■ ■ ■ ■	6/7
<b>SUBTOTAL</b>		<b>26/28</b>
<b>Technology Courses</b>		
+ ARC 101 Materials & Methods of Construction .....	■ □ □ □	3
+ ARC 105 Architectural Drafting I .....	■ □ □ □	4
ARC 106 Architectural Drafting III .....	□ ■ □ □	3
ARC 107 Architectural Computer & CAD Applications .....	□ ■ □ □	3
ARC 110 CAD System Orientation .....	■ □ □ □	2
+ ARC 111 Mechanical & Electrical Equipment for Buildings .....	■ ■ □ □	3
+ ARC 204 Estimating Building Construction .....	□ ■ □ □	3
ARC 205 Architectural Drafting II .....	□ □ ■ □	3
ARC 206 Architectural Drafting IV .....	□ □ □ ■	3
ARC 207 Architectural Presentation Drawings .....	□ □ ■ ■	3
+ ARC 211 Elements of Structural Design .....	□ □ ■ ■	3
+ ARC 221 Site Preparation .....	□ □ ■ ■	3
<b>SUBTOTAL</b>		<b>36</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62

#### Approved Electives:

ARC 140 Intro. to Landscape Architecture	GB 131 Small Business Management
ARC 200 Spatial Analysis & Presentation	GB 145 Principles of Sales
ARC 212 Theory & Practice of Structural Steel Design	GB 153 Introduction to Business
	GB 251 Business Law I
ARC 231 Concrete Fundamentals	MTH 111 Applied Algebra
ARC 254 Earth Sheltered Housing Design	MTH 113 Applied Trigonometry
ART 112 Drawing II	MTH 119 Intermediate Algebra
ART 115 Basic Design-Two Dimensional	MTH --- Any Math Course 120 or higher
ART 116 Basic Design - Three Dimensional	PHO --- Any Course in Photography
CIS --- Any Computer Info System Course	RC --- Any Residential Construction Course that is not co-listed
CPS --- Any Computer Science Course	

#### NOTATIONS:

1. Courses ARC 105, 106, 205 and 206 must be taken in sequential order. For information about day and/or evening availability of courses, contact a technical career counselor.
2. This program prepares you for a technical level career, but some courses are transferable to baccalaureate degree programs in Architecture. If you want to become an architect, you are advised to consult with a counselor about transfer requirements.
3. ART 251 or 252 is offered only in the Winter Semester.
4. Courses marked with "+" are co-listed in Residential Construction and can be taken as an RC course; i.e., ARC 105 = RC 109.
5. See page 91 for graduation requirements.
6. Delta College reserves the right to modify program requirements.

## AUTOMOTIVE SERVICE EDUCATIONAL PROGRAM

### Associate in Applied Science Degree

The Automotive Service Educational Program (ASEP) is an Associate degree automotive program designed to upgrade your technical competence and professional level as an incoming dealership technician. At Delta College, the entire program requires 103 weeks of training, with 48 weeks spent on the Delta College campus and 55 weeks in a General Motors dealership. Each specialized subject is dealt with in the classroom and laboratory on campus and is immediately followed by related work experience in the dealership. This rotation system continues until the program is completed.

The courses below must be taken in the semesters specified.

		Sem
		Hrs
<b>First Semester</b>		
ABS 108	Becoming a Master Student .....	2
AGM 160	Minor Vehicle Service .....	2
AGM 162	Engine Service .....	5
1. AGM 170	Dealership Work Experience I .....	1
AGM 183	Specialized Electronics Training .....	4
PE ---	Physical Activity Elective .....	1
WELD 101	Fuel Gas Weld Cutting .....	1
SUBTOTAL		16
<b>Second Semester</b>		
AGM 185	Applied Auto Electronics .....	3
AGM 187	Electronic Engine Control Drivability .....	9
1. AGM 190	Dealership Work Experience II .....	1
2. ENG 101	Applied English Skills .....	5
SUBTOTAL		18
<b>Third Semester</b>		
AGM 167	Air Conditioning .....	2
1. AGM 270	Dealership Work Experience III .....	1
AGM 284	Brakes .....	4
AGM 286	Drivelines and Manual Transmissions .....	3
PE ---	Physical Activity Elective .....	1
PSY 101	Applied Psychology .....	3
SUBTOTAL		14
<b>Fourth Semester</b>		
AGM 260	Suspensions .....	5
AGM 265	Applied Body Electrical .....	2
1. AGM 280	Dealership Work Experience IV .....	1
AGM 287	Customer Service Advising .....	2
POL 103	Introduction to American Government <b>OR</b>	
POL 111	American Government and Politics <b>OR</b>	
POL 212	State and Local Governments <b>OR</b>	
HIS 103	History of American Government .....	3/4
SUBTOTAL		13/14
<b>Fifth Semester</b>		
AGM 272	Automatic Transmissions .....	8
1. AGM 288	Dealership Work Experience V .....	1
SUBTOTAL		9
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		70/71

#### NOTATIONS:

1. These courses are taught at a dealership and are not on campus.
2. ENG 111 and 112 or 113 may be substituted for ENG 101.
3. Since half of the program is spent at the dealership, you are required to have a sponsoring General Motors dealer. The main responsibility of the dealership is to provide employment during all of the work experience periods.
4. All tuition, fees, housing (if needed), textbook costs and tools are your responsibility.
5. Contact persons: Edward Thayer or Tim Weiss, (517) 754-6558.
6. See page 91 for graduation requirements.
7. Delta College reserves the right to modify program requirements.



## Associate in Applied Science Degree/Certificate

In addition to being trained to enter the automotive field as a technician or service writer, you will have a broader based education by completing the Associate degree. You may also choose to continue your education by seeking a Baccalaureate degree.

Both certificate and Associate degree is available. For those interested in specific segments of an automotive course, short term courses are available and are identified by the core course number and followed by the letter A, B, C, etc.

### Automotive Service Courses

#### Introductory Automotive

*AUT 100	Introduction to Automotive Service .....	■ □ □ □	3
*AUT 108	Automotive Electronics .....	■ □ □ □	3
SUBTOTAL			6

#### 1st Automotive Cluster

AUT 110	Auto Electronics I OR .....	□ ■ ■ ■	4
AUT 110A	Automotive Battery Service .....		1
AUT 110B	Automotive Starting System .....		1
AUT 110C	Auto Charging System .....		1
AUT 110D	Auto Wiring Diag. ....		1

AUT 112	Engine Service .....	□ ■ ■ ■	6
AUT 114	Brake System Service OR .....	□ ■ ■ ■	5
AUT 114A	Drum Brakes .....		1.5
AUT 114B	Disc Brakes .....		1.5
AUT 114C	Hydraulic/Pwr Assist .....		1
AUT 114D	Anti-Lock Brakes .....		1
SUBTOTAL			15

#### 2nd Automotive Cluster

AUT 120	Driveline Service OR .....	□ ■ ■ ■	6
AUT 120A	Clutch Service .....		.8
AUT 120B	Manual Tran/Transaxle .....		1.5
AUT 120C	Rear Axle/Diff. Ser. ....		2.0
AUT 120D	Front Wheel/4 Wheel Drive .....		1.7
AUT 122	Auto Transmission Service .....	□ ■ ■ ■	8
SUBTOTAL			14

#### 3rd Automotive Cluster

AUT 210	Auto Electronics II OR .....	□ ■ ■ ■	3
AUT 210A	Airbags/Columns .....		.6
AUT 210B	Pwr locks/Windows .....		.6
AUT 210C	Instruments/Lighting .....		.6
AUT 210D	Cruise Control .....		.6
AUT 210E	Wiper Systems .....		.6

AUT 212	Suspension System Service OR .....	□ ■ ■ ■	7
AUT 212A	Frame Linkage/Manual Gears .....		2
AUT 212B	Suspension Systems/Align. ....		4
AUT 212C	Power Steering/Electronics .....		1

AUT 214	Heating/Air Cond. Service OR .....	□ ■ ■ ■	5
AUT 214A	Heating/Cooling System .....		2
AUT 214B	Auto Air Cond. Service .....		3
SUBTOTAL			15

#### 4th Automotive Cluster

AUT 220	Electronic Systems Service .....	□ ■ ■ ■	2
AUT 222	Fuel System Service OR .....	□ ■ ■ ■	6
AUT 222A	Carb/Throttle Body Ser. ....		1
AUT 222B	Carb Fuel System Serv. ....		1.5
AUT 222C	Fuel Injection Supply Serv. ....		1.5
AUT 222D	Carb Fuel Delivery Ser. ....		1
AUT 222E	TBI/PFI Fuel Delivery Ser. ....		1.5

AUT 224	Engine Performance Service OR .....	□ ■ ■ ■	6
AUT 224A	Ignition Principles .....		1.5
AUT 224B	Eng. Per. Test Equipment .....		1.5
AUT 224C	Chry. Eng. Perf. Ser. ....		1
AUT 224D	GM Eng. Perf. Ser. ....		1
AUT 224E	Ford Eng. Perf. Ser. ....		1
SUBTOTAL			14

### Service Internship

1. AUT 260	Auto Service Skills .....	□ □ ■ ■	1
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### General Education Courses

CIS 114	Computer Fundamentals/IBM .....	■ ■ ■ ■	1
GB 110	Business Math OR .....		
MTH ---	Algebra I or higher .....	■ □ □ □	3
ENG 111	College Composition I .....	■ ■ □ □	3
ENG 113	Technical Writing .....	■ ■ ■ ■	3
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
POL 103	Introduction to American Government OR .....		
POL 111	American Government and Politics OR .....		
POL 212	State and Local Governments OR .....		
HIS 103	History of American Government .....	■ ■ ■ ■	3/4
PSY 101	Applied Psychology OR .....		
PSY 211	General Psychology .....	■ ■ ■ ■	3/4
SUBTOTAL			18/20

### Certificate Requirements

*AUT 100	Introduction to Automotive Service .....	3
*AUT 108	Introduction to Automotive Electronics .....	3
24 AUT Credits	after AUT 100 & 108 .....	24
1. AUT 260	Automotive Service Skills .....	1
MINIMUM CREDITS REQUIRED FOR CERTIFICATE		31

Minimum Certificate requirements include completion of two clusters. You are, however, encouraged to complete more than two clusters.

### Associate Degree Requirements

*AUT100	Introduction to Automotive Service .....	3
*AUT108	Introduction to Automotive Electronics .....	3
39 AUT Credits	after AUT 100 & 108 .....	39
1. AUT260	Automotive Service Skills .....	1
General Education Courses	.....	18/20
MINIMUM CREDITS REQUIRED FOR ASSOCIATE DEGREE		64/66

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course prior to enrolling in any other automotive course.

1. The selection of an Automotive Service Skills internship is done after consulting with the automotive faculty.
2. The minimum Associate degree requirements include completion of three clusters. You are encouraged to complete all four automotive clusters.
3. See page 91 for graduation requirements.
4. Delta College reserves the right to modify program requirements.



## Associate in Applied Science/Certificate

You will obtain the knowledge, skill and a portion of the aeronautical experience\* necessary to meet the requirements for a Commercial Pilot Certificate (airplane category) and Instrument Rating. You will be prepared to transfer to a baccalaureate institution with degree programs for professional pilots.

\*You must arrange and pay for additional aeronautical experience (flight hours) to meet Federal Aviation Regulations, Part 61, requirements for Commercial Pilot.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
CPS 125	Computer Literacy .....	■ ■ ■ ■	3
ENG 111	College Composition I .....	■ □ □ □	3
ENG 112	College Composition II OR		
ENG 113	Technical Writing .....	□ ■ ■ ■	3
GEO 111	Physical Geography .....	■ ■ ■ □	4
MTH 119	Intermediate Algebra .....	■ ■ ■ ■	4
PE -	Physical Activity Elective .....	■ ■ ■ ■	1
PE -	Physical Activity Elective .....	■ ■ ■ ■	1
POL 111	American Government and Politics .....	■ ■ ■ ■	4
SPH 114	Interpersonal Communications .....	■ ■ ■ ■	3
PSY 211	General Psychology .....	■ ■ ■ ■	4
# - -	Humanities Electives .....	■ ■ ■ ■	5
SUBTOTAL			35

### Basic Program Requirements

>* AFT 101	Private Pilot Ground Training .....	■ □ □ □	4
>* AFT 105	Primary Pilot Flight Train I .....	■ □ □ □	2
>* AFT 106	Primary Pilot Flight Train II .....	■ ■ □ □	3
>* AFT 201	Instrument Pilot Ground Train .....	■ □ □ □	4
>* AFT 202	Aviation Meteorology .....	□ □ ■ ■	1
>* AFT 210	Commercial Pilot Ground Train .....	□ □ ■ ■	4
>* AFT 215	Adv. Pilot Flight Training I .....	□ ■ ■ □	2
>* AFT 216	Adv. Pilot Flight Training II .....	□ □ ■ □	3
>* AFT 217	Adv. Pilot Flight Training III .....	□ ■ ■ ■	2
>* AFT 218	Adv. Pilot Flight Training IV .....	□ □ ■ ■	3
>* GEO 103	Introduction to Meteorology .....	■ ■ □ □	3
SUBTOTAL			31

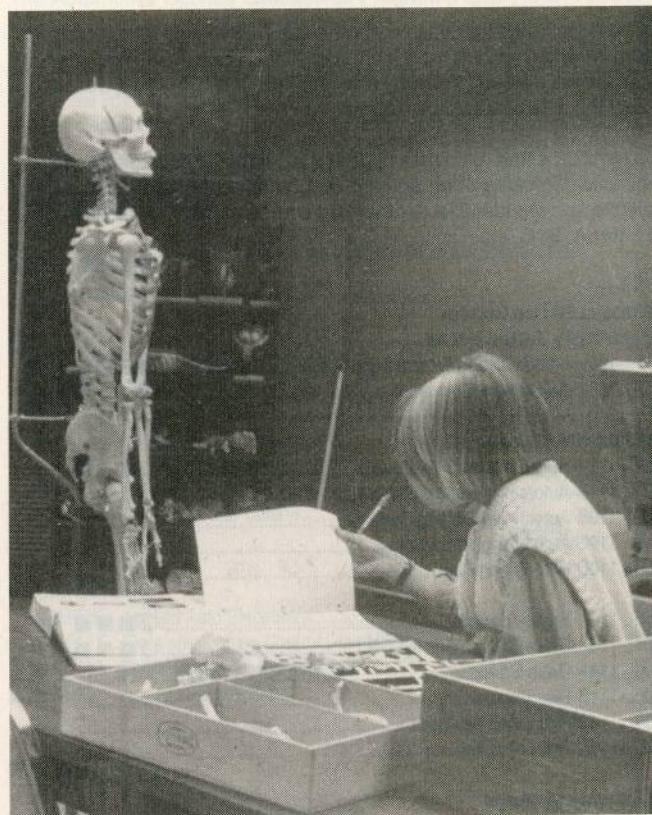
### Recommended Electives

CHM 101	General Chemistry I .....		5
MTH 160	Calculus for the Social and Managerial Sciences .....		4
PHY 101	Applied Physics OR		
PHY 111	General Physics I .....		4
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			66
TOTAL CREDITS REQUIRED FOR CERTIFICATE			31

> **Certificate Option:** A Certificate will be awarded when courses preceded by a greater than (>) sign are successfully completed. There are additional hours of aeronautical experience (flying hours) required to meet Federal Aviation Regulations, part 61, to qualify for the examination for a Commercial Pilot Certificate (airplane category) and an Instrument Rating.

### NOTATIONS:

- # Check transfer school requirements in the selection of the five hours Humanities' Requirement.
- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. This Program meets MACRAO requirements of 6 English, 8 Science, 8 Social Science and 8 Humanities credits.
- 2. Permission of Coordinator and meeting Federal Aviation Administration criteria are required prior to enrolling in any of the following courses: AFT 105, AFT 106, AFT 215, AFT 216, AFT 217, and AFT 218.
- 3. The following flight courses have special fees for flight instructor and airplane rental that will be paid by the student: AFT 105, 106, 215, 216, 217, and AFT 218.
- 4. See page 91 for graduation requirements.
- 5. Delta College reserves the right to modify program requirements.



*"I Decided on Delta!"*



# BROADCASTING AND TELECOMMUNICATIONS

## OPTIONS: TELEVISION RADIO

### Associate in Applied Science Degree

Delta College owns and operates public television stations WUCM-TV Channel 19 and WUCX-TV 35, both affiliated with national and regional educational networks. Delta College also operates, in conjunction with Central Michigan University, public radio station WUCX-FM 90.1, affiliated with national public radio program networks. In addition to these broadcast facilities, Delta College operates a student television production studio and an audio production studio for both broadcast and student use. These Delta broadcasting facilities provide you with practical experience under laboratory and real-time operating conditions. You will learn to operate sound, recording, and transmitting equipment; become involved in production activities; be exposed to program producing, directing, and performance; and learn principles and techniques of many specialty areas in the fields of broadcasting and telecommunications. The Broadcasting and Telecommunications program prepares you with the fundamental information and experience necessary for entry-level positions in communication and information industries.

You must complete all required courses and select four courses in one of the career tracks. Discussion regarding the best order for you to schedule the courses with the Broadcasting and Telecommunications counselor is recommended. Check your course descriptions for pre-requisite courses.



*"I Decided on Delta!"*

Mike Dillon and Dempsey Tillman

BRT 261	Assistant Director II .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	2
BRT 270	Current Trends and Issues - Seminar .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	2

#### CHOOSE ONLY ONE TRACK: Television or Radio

##### Television Track

BRT 154	Television Studio Operations II .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
BRT 157	Television Field Production .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
BRT 222	Broadcast Journalism .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
BRT 251	Television Producing and Directing <b>OR</b>		
BRT 257	Advanced Television Field Production .....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3
SUBTOTAL			12

##### Radio Track

BRT 222	Broadcast Journalism .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
BRT 230	Broadcast Audio Production .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
BRT 232	Radio News Production .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
BRT 234	Music Programming Workshop <b>OR</b>		
BRT 256	Audio Operations II .....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3
SUBTOTAL			12

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63

#### NOTATIONS:

1. Based on available facilities and equipment, this Program is considered a "limited" enrollment program. Classes will be small and interaction with faculty will provide comprehensive instruction. You are encouraged to see the Broadcasting & Telecommunications Program counselor prior to registration.
2. If you are **PLANNING TO TRANSFER**, you should plan on completing the MACRAO requirements. Please plan on taking the following additional classes: one additional course in Social Science, two additional courses in Humanities, two different courses (at least 8 credits) in Science of which one science must include lab. Please work closely with the Program counselor.
3. See page 91 for graduation requirements.
4. Delta College reserves the right to modify program requirements.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
ECN 221	Principles of Economics I .....	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	4
ENG 111	College Composition I .....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
ENG 112	College Composition II .....	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
GB 153	Introduction to Business .....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
PE ---	Physical Activity Elective .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	1
PE ---	Physical Activity Elective .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	1
POL 103	Introduction to American Government <b>OR</b>		
POL 111	American Government and Politics <b>OR</b>		
POL 212	State and Local Governments <b>OR</b>		
HIS 103	History of American Government .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3/4
SPH 112	Fundamentals of Oral Communication .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
SUBTOTAL			21/22

#### Broadcast and Telecommunications Core Courses

BRT 130	Electronic Media & Society .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
BRT 149	Television Studio Operations I .....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
BRT 150	Broadcast Writing .....	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
BRT 153	Broadcast Performance .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
BRT 156	Audio Operations I .....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
BRT 177	Telecommunications Facilities .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	4
BRT 220	Broadcast History, Law, and Responsibility .....	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	4
SUBTOTAL			23

#### General Electives

(May be selected from BRT or Non-BRT courses) .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	6
SUBTOTAL		6

#### Recommended BRT Elective Courses

BRT 227	Broadcast Sales .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3
BRT 260	Assistant Director I .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	2



## Associate in Science Degree

A degree in Chemical Technology may transfer or could lead to a position with area employers as a Technologist. As a Chemical Technologist, you will operate many kinds of laboratory instruments, be involved with data collection and analysis, and do technical report writing and research projects. This Associate in Science program includes core courses that allow flexibility in choosing a technical focus. Degrees in Water/Wastewater Treatment Technology, Chemistry, Biology, Physics or Engineering may also be pursued using most of the credits from this program.

		Suggested Sequence	Sem Hrs
<b>Courses</b>			
CHM 111	General Inorganic Chemistry I .....	■ □ □ □	4
CHM 112	General Inorganic Chemistry II .....	□ ■ □ □	4
CHM 211	Organic Chemistry I .....	□ □ ■ □	5
CHM 212	Organic Chemistry II .....	□ □ □ ■	5
CHM 230	Chemical Analysis/Instrumentation .....	□ □ ■ □	3
CPS 125	Computer Literacy .....	■ ■ ■ □	3
CT 100	Introduction to Chemical Technology .....	■ ■ ■ □	1
ENG 111	College Composition I .....	■ □ □ □	3
ENG 112	College Composition II .....	□ ■ □ □	3
MTH 121	Plane Trigonometry .....	□ ■ ■ □	3
PE ---	Physical Activity Elective .....	■ ■ ■ □	1
PE ---	Physical Activity Elective .....	■ ■ ■ □	1
PHY 111	General Physics I .....	■ □ □ □	8/10
PHY 112	General Physics II .....	□ ■ □ □	
PHY 211	Physics I .....	□ □ ■ □	
PHY 212	Physics II .....	□ □ □ ■	
BIO 111	Principles of Biology .....	■ ■ ■ ■	
* POL 103	Introduction to American Government OR		
* POL 111	American Government and Politics OR		
* POL 212	State and Local Governments OR		
* HIS 103	History of American Government .....	■ ■ ■ ■	3/4
+SCI 250	Research Project in Science .....	□ □ □ □	2/6
+--- ---	Humanities Electives .....	■ ■ ■ ■	8
#--- ---	Social Science Elective .....	■ ■ ■ ■	4/5
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			62/70

### NOTATIONS:

- + Courses must be completed in at least two different subject areas. Consult page 86 of this catalog for a list of approved Humanities courses. Industry recommends enrollment in SPH 112 and/or SPH 114 and PHL 221.
- # Additional Social Science credits must be earned in an area other than Political Science. See page 86 for a list of approved courses. Industry recommends enrollment in ECN 221 and POL 111 to fulfill the 8 credits required in Social Science.
- A minimum of 2 credits is required for SCI 250. However, in consultation with faculty, a research project for up to 6 credits may be chosen.
- If you are planning to transfer to a Baccalaureate degree program, you should consult with a Counselor so that specific transfer college requirements can be completed.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.



*"I Decided on Delta!"*

Kimberly Dona



# CHILD DEVELOPMENT

## Associate in Applied Science Degree/Certificate

Child care workers work in a variety of settings in the care and guidance of young children. This includes concern for the mental, social, physical, and emotional growth and development of the child. As a child care worker, you should be able to work under supervision and work cooperatively with other personnel. Each child care worker should also gain the respect, confidence, and cooperation of children, maintain discipline and enforce as well as deal with emergency situations calmly. Physically, you must maintain good health and be able to stoop, kneel, crouch, and crawl. Good vision and hearing is necessary as well as being able to lift up to 40 pounds. Applicants for child care worker positions are required to pass a tuberculin test and may have to undergo tests or immunization for other communicable diseases.

As a supplement to the supportive skills learned from courses completed in the Child Development Certificate program, the Associate in Applied Science degree program will also stress leadership skills which are needed in a lead teacher position. In addition to the employment opportunities offered by the certificate program, graduates of this degree program will also be qualified to apply for positions as lead teachers, child care center directors and should be eligible to apply for a license for their own child care agency.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
BIO 111	Principles of Biology .....	■ ■ □ □	4
ENG 111	College Composition I .....	■ □ □ □	3
ENG 112	College Composition II .....	□ ■ □ □	3
PE ---	Physical Activity Elective .....	■ ■ □ □	1
PE ---	Physical Activity Elective .....	■ ■ □ □	1
POL 103	Introduction to American Government		
POL 111	American Government and Politics		
POL 212	State and Local Governments		
HIS 103	History of American Government .....	■ ■ □ □	3/4
1. ---	Humanities Electives .....	■ ■ □ □	8
---	Science Elective (other than Biology) .....	■ ■ □ □	4
2.> ---	Social Science Elective (other than Political Science) .....	■ ■ □ □	2/4
4.> ---	Elective .....	■ ■ ■ ■	2/5
SUBTOTAL			31/37

### Child Development Courses

> * CD 111	Introduction to Early Childhood Education .....	□ □ ■ □	2
> * CD 112	Early Childhood Program .....	□ □ ■ □	2
> * CD 113	Interaction with Young Children .....	□ □ ■ □	3
> * CD 114	Child Development I .....	□ □ ■ □	3
3.> * CD 115	Child Development II .....	□ □ ■ □	3
> * CD 116	Families in the American Culture .....	□ □ ■ □	3
> * CD 117	Practicum for Early Childhood Assistant .....	□ □ ■ □	6
> * CD 160	Introductory Practicum in Child Development .....	□ □ ■ □	2
* CD 200	Practicum as a Lead Teacher .....	□ □ ■ □	4
SUBTOTAL			28

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE	62/64
TOTAL CREDITS REQUIRED FOR CERTIFICATE	30

- > **CERTIFICATE OPTION** - A certificate will be awarded to you when you successfully complete courses preceded by the ">" sign. (30 credits minimum).
- \* A "C" (2.0) minimum grade is required in each asterisked course.

### NOTATIONS:

1. Suggested Elective: Humanities SPH 114 Interpersonal Communications
2. Suggested Electives Social Science: If you are following the Certificate option, you are only required to take 3 credit hours. PSY 101 Applied Psychology is highly recommended.
3. PSY 223 may be substituted for CD 115. Credit may be earned in CD 115 or PSY 223 but not in both.

4. Suggested Electives: PEH 168 Advanced First Aid and Emergency Care
5. CD 111; 112; 113; 114; 160 are taken as a block in the Fall Semester only. CD 115; 116; 117 are taken as a block in the Winter Semester only.
6. Child Development Course CD 200 should be taken after all other Child Development courses and General Education have been completed. CD 200 is offered Spring and Winter only.
7. If all requirements have been met except CD 200, the student has the option of the Associate of Arts degree in which CD 116 can be counted toward the Social Science requirements.
8. A maximum of 25 students will be admitted into the Child Development courses in the Fall Semester ONLY. This is on a "first come-first served" basis as determined by the general registration system.
9. A Child Development information session is usually held in August. Once you have been registered in the Child Development program, you will receive a letter from the Coordinator inviting you to this informational session. It is necessary for all new Child Development students to attend.
10. The Certificate may be expanded upon to earn an Associate in Applied Science degree in the Child Development Program.
11. You will be required to submit a health appraisal signed by a licensed physician declaring, to the best of the physician's knowledge, that you are physically capable of performing the duties that are required for the safe care of children. Also, you must submit evidence of freedom from communicable tuberculosis.
12. You may be required to sign a document asking whether you have ever been convicted of an offense other than a minor traffic violation and whether you have ever been involved in abuse or neglect of children.
13. If you want to transfer to another college to pursue a Baccalaureate degree in pre-school or elementary education, you are advised to consult with a counselor prior to enrollment in this program. Delta College is not responsible for program requirements and student acceptance by transfer colleges.
14. See page 91 for graduation requirements.
15. Delta College reserves the right to modify program requirements.

## "Counselor's Quote"

George Welte: New Lothrop High School

*"Delta College offers outstanding opportunities for my students, whether it be a two-year transfer program or a one or two-year certificate program. I classify Delta College as very user friendly."*



## CLOTHING SPECIALIST

### Associate in Business Studies Degree/ Certificate

The Fashion-Clothing Specialist degree program is designed for you if you have special talent and flair for creating and constructing apparel and are interested in and like working with fabrics and apparel accessories. Upon completing this program, you will be qualified to seek positions such as: buyers or managers of retail fabric departments; tailors within department and specialty stores; instructors with community school clothing departments; sales personnel, consultants or advisors in the fashion and fabrics industry or with manufacturers of fashion accessories.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
PSY 101 Applied Psychology .....	■ ■ ■ ■	3
SPH 112 Fundamentals of Oral Communication .....	■ ■ ■ ■	3
--- --- General Electives .....	■ ■ ■ ■	8
<b>SUBTOTAL</b>		<b>19/20</b>

#### Business Courses

CED 122 Cooperative Education .....	□ □ □ ■	3
> FM 110 Apparel Construction and Analysis .....	■ □ □ □	4
> FM 120 Apparel Tailoring .....	□ □ □ □	4
> FM 150 History and Dynamics of Fashion .....	□ □ □ □	3
> FM 155 Textiles .....	■ □ □ □	3
> FM 170 Fund Theories of Fashion Design & Merchandising .....	□ □ □ □	3
> FM 210 Apparel Pattern Drafting and Design .....	□ ■ □ □	4
> FM 220 Advanced Apparel Tailoring .....	□ □ □ □	4
FM 240 Fashion Coordination .....	□ □ □ □	3
GB 110 Business Math .....	■ □ □ □	3
GB 145 Sales OR		
GB 247 Principles of Retailing .....	□ ■ □ □	3
* OSE 151 Business Communications I .....	■ □ □ □	3
OSE 152 Business Communications II .....	□ □ □ □	3
<b>SUBTOTAL</b>		<b>43</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>		<b>62/63</b>
<b>TOTAL CREDITS REQUIRED FOR CERTIFICATE</b>		<b>30</b>

#### Suggested Electives

ART 115 Basic Design - 2 Dimensional .....	■ □ □ □	3
FM 151 Display .....	□ □ ■ ■	3
FM 250 Seminar in Clothing Fashion .....	□ □ ■ ■	2
FM 251 Apparel Market Experience .....	□ □ ■ ■	1
GB 153 Introduction to Business .....	■ ■ ■ □	3
GB 248 Principles of Buying for Resale .....	□ □ ■ ■	3
> FM 245 Advanced Textiles .....	□ ■ ■ ■	3
> --- --- Co-Op or General Electives .....	□ □ ■ ■	2

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by the ">" sign.

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Electives may be substituted upon demonstration of equivalent skills for course FM 110.
- 2. You are advised to consult with your counselor about elective courses. Course GB 153 Introduction to Business is highly recommended.
- 3. See page 91 for graduation requirements.
- 4. Delta College reserves the right to modify program requirements.

## COMPUTER AIDED DRAFTING

### Certificate Program

As a Computer Drafter, you will make detailed manual or computer drawings of products and machinery from sketches and specifications conceived by engineers and designers. The finished drawings are used as working plans for engineering and manufacturing purposes. Depending on experience and level of responsibility, duties may vary from preparing basic drawings to modifying the finished design using computer aided design equipment.

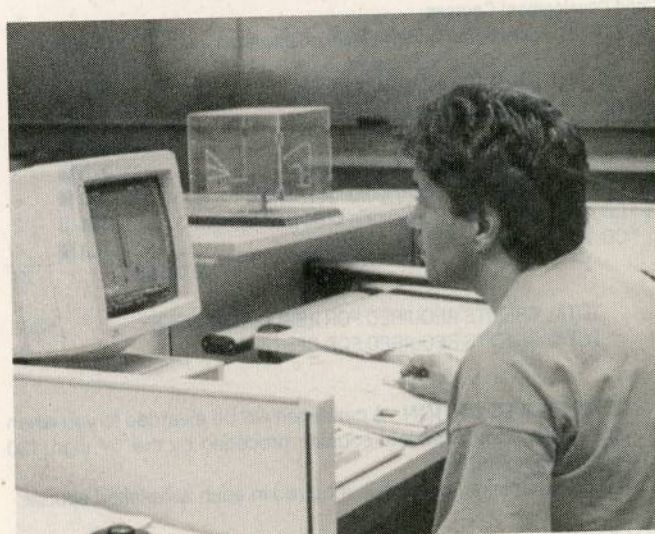
In order to enter this area of work, you should be able to: work within precise limits or standards of accuracy, concentrate for long periods of time, visualize 3-dimensional objects from drawings or pictures, see detail in objects or drawings, and recognize slight differences in shapes and shadings. Computer skills are a requirement.

	Suggested Sequence	Sem Hrs
<b>Technical Courses</b>		
CAD 114 Auto CAD Introduction .....	■ □ □	2
CAD 214 Auto CAD Effective Techniques .....	□ ■ □	2
CAD 224 Auto CAD Advanced Techniques .....	□ □ ■	2
CAD 226 Auto CAD 3D Advantage .....	□ □ ■	2
DRF 104 Basics of Industrial Drafting OR		
DRF 105 Beginning Industrial Drafting .....	■ □ □	4/3
DRF 107 Computer-Aided Industrial Drafting .....	□ ■ □	3
DRF 128 Geometric Tolerancing .....	□ ■ □	2
DRF 257 Advanced Industrial Drafting .....	□ □ ■	6
MFG 111 Manufacturing Processes .....	■ □ □	3
MS 113 Machining Processes .....	■ □ □	2
MT 110 Machine Tool Calculations OR		
MTH 111 Applied Algebra .....	□ ■ □	5/4

**TOTAL CREDITS REQUIRED FOR CERTIFICATE 31/33**

#### NOTATIONS:

1. Students wanting to pursue an Associate Degree should consider Mechanical Design Technology.
2. See page 91 for graduation requirements.
3. Delta College reserves the right to modify program requirements.



*"I Decided on Delta!"*



# COMPUTER INFORMATION SYSTEMS

## OPTIONS:

### ACCOUNTING

### COMPUTER APPLICATION SPECIALIST PROGRAMMING

## Associate in Business Studies Degree/ Certificate

Computers can process masses of information rapidly and accurately. A programmer prepares detailed instruction (a program) using special computer language to direct the computer through the steps needed to complete an operation. A computer specialist with accounting skills will be able to understand the accounting language and computerize the data to produce special accounting reports and functions. Delta College offers three Computer Information Systems degree options: Programming; Computer Applications Specialist; Accounting. You must complete all "Basic Core Program" courses plus courses listed in one of the three options.

	Suggested Sequence	Sem Hrs
<b>General Education Courses (all options)</b>		
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
--- --- Humanities OR Social Science elective		
Those below are highly recommended: .....		
GEO 111 Physical Geography .....	■ ■ ■ ■	3/4
PHL 221 Logic .....	■ ■ ■ ■	
PSY 101 Applied Psychology .....	■ ■ ■ ■	
PSY 211 General Psychology .....	■ ■ ■ ■	
SPH 112 Fundamentals of Oral Communication .....	■ ■ ■ ■	
SPH 114 Interpersonal Communications .....	■ ■ ■ ■	
SPH 212 Listening .....	■ ■ ■ ■	
SUBTOTAL		8/10

### Business Courses (all options)

> * ACC 211 Principles of Accounting I .....	■ ■ ■ ■	4
* ACC 212 Principles of Accounting II .....	■ ■ ■ ■	4
> CIS 112 Introduction to AS400 and Profs .....	■ ■ ■ ■	1
> CIS 118 IBM DOS and Windows .....	■ ■ ■ ■	2
CIS 130 Developing Programming Logic .....	■ ■ ■ ■	2
> * CIS 133 Introduction to Computer Information System .....	■ ■ ■ ■	4
CIS 135 Information Storage & Retrieval .....	■ ■ ■ ■	3
Select from CIS 139 and CIS 140 or CIS 170		
> * CIS 139 Introduction to Programming Using BASIC		
1. * CIS 140**BASIC Programming II .....	■ ■ ■ ■	
CIS 170 Introduction to C++ Programming .....	■ ■ ■ ■	2/3
CIS 235 Systems Analysis & Design .....	■ ■ ■ ■	3
* CIS 245 COBOL Programming OR .....	■ ■ ■ ■	3
* CIS 243 Report Program Generator Programming		
CIS --- Select from CIS 201, 216 or 260 .....	■ ■ ■ ■	2/3
> * OSE 151 Business Communications I .....	■ ■ ■ ■	3
OSE 152 Business Communications II .....	■ ■ ■ ■	3
2. OSE 170 Keyboarding I: Keyboard .....	■ ■ ■ ■	2
SUBTOTAL		39/40

### OPTION -- Accounting

ACC 214 Microcomputer Accounting		
Applications (concurrently with ACC 212) .....	■ ■ ■ ■	4
*ACC 223Accounting Practices/Working Capital .....	■ ■ ■ ■	4
*ACC 224Accounting Practices/Long Term .....	■ ■ ■ ■	4
3. MTH 208 Elementary Statistics .....	■ ■ ■ ■	3
--- --- Elective .....	■ ■ ■ ■	3
SUBTOTAL		18

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 63/67

Suggested  
Sequence

Sem  
Hrs

### OPTION -- Programming

CIS 240 Windows Programming Using Visual BASIC OR .....	■ ■ ■ ■	2/3
CIS 262 Database Programming III		
CIS 253 Advanced RPG OR		
CIS 255 Advanced COBOL .....	■ ■ ■ ■	3
CIS --- Select from CIS 170, 265, or 270 .....	■ ■ ■ ■	3
CIS 170 Introduction to C++ Programming		
CIS 265 Introduction to C Programming		
CIS 270 Advanced C++ Programming		
++MTH 208 Elementary Statistics .....	■ ■ ■ ■	3
--- --- General Electives .....	■ ■ ■ ■	6
SUBTOTAL		17/18

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/67

### OPTION -- Computer Application Specialist

>CIS 116 Introduction to Data Communications .....	■ ■ ■ ■	1
>CIS 120 Microcomputers in Business .....	■ ■ ■ ■	3
CIS 134 Lotus 1-2-3 OR .....	■ ■ ■ ■	3
CIS 136 Microsoft Excel		
CIS 216 Local Area Networks .....	■ ■ ■ ■	3
>CIS 260 Database .....	■ ■ ■ ■	3
(Select electives from below:)		
GB 110 Business Math .....	■ ■ ■ ■	
GB 131 Small Business Management I .....	■ ■ ■ ■	
GB 132 Small Business Management II .....	■ ■ ■ ■	6
GB 143 Principles of Advertising .....	■ ■ ■ ■	
>GB 153 Introduction to Business .....	■ ■ ■ ■	
MTH --- Elective .....	■ ■ ■ ■	
SUBTOTAL		19

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 64/68

> **CERTIFICATE OPTION** (Computer Application Specialist only) - A certificate will be awarded to you when you successfully complete these courses.

### CERTIFICATE OPTION ONLY

>CIS 115 Computer Fundamentals/Mac OR		
>CIS 116 Introduction to Data Communications .....	■ ■ ■ ■	1/2
>CIS 119 Micro Hardware Install .....	■ ■ ■ ■	1
>CIS 134 Lotus 1-2-3 OR		
CIS 136 Microsoft Excel .....	■ ■ ■ ■	3
>OSE181 Microsoft Word OR		
>OSE191 WordPerfect for Windows .....	■ ■ ■ ■	3
TOTAL CREDITS REQUIRED FOR CERTIFICATE		36/37

### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Take CIS 139 before CIS 140, if you do not have a solid knowledge of BASIC.
- 2. Proficiency in typing OSE 170 is required for all CIS classes; however, it may be waived by successfully passing a keyboarding test. See counselor.
- 3. Dependent upon your background. If you can handle MTH 208 without additional algebra prerequisites, then no other math is required.
- 4. You may substitute ENG 111 and ENG 112 for OSE 151 and 152.
- 5. The above curricula are intended to prepare you for a career upon graduation from Delta College. If you are planning to transfer to a Baccalaureate degree program you should consult with a counselor before enrolling in computer, business, or general education courses so that specific transfer college requirements can be completed.
- 6. See page 91 for graduation requirements.
- 7. Delta College reserves the right to modify program requirements.



# COMPUTER MARKETING

## Associate in Business Studies Degree/Certificate

This program provides education in the computer business field, with an emphasis on computer marketing. Basic business knowledge and computer skills training are necessary if you are interested in distributing or marketing computers, hardware and software.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
ECN 221 Principles of Economics I .....	<input type="checkbox"/> ■ ■ ■ ■	4
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government <b>OR</b>		
POL 111 American Government and Politics <b>OR</b>		
POL 212 State and Local Governments <b>OR</b>		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
SUBTOTAL		9/10

### Business Courses

* ACC 111 Introductory Accounting <b>OR</b>		
*+ ACC 211 Principles of Accounting I .....	■ ■ ■ ■	4
CED 127 Co-Op I: Retail/Computer .....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ■	3
> CIS 115 Introduction to Macintosh/Business Applications .....	■ ■ ■ ■	2
> CIS 118 IBM PC DOS and Windows .....	■ ■ ■ ■	2
> CIS 120 Microcomputers in Business .....	■ ■ ■ ■	3
> CIS 132 Spreadsheet Fundamentals .....	■ ■ ■ ■	2
> CIS 133 Introduction to Computer Information Systems .....	■ ■ ■ ■	4
* > GB 110 Business Math .....	■ ■ ■ ■	3
> GB 145 Principles of Sales .....	■ ■ ■ ■	3
> GB 153 Introduction to Business .....	■ ■ ■ ■	3
GB 243 Principles of Marketing .....	<input type="checkbox"/> ■ ■ ■ ■	3
* GB 245 Principles of Management .....	<input type="checkbox"/> ■ ■ ■ ■	3
> GB 251 Business Law I .....	<input type="checkbox"/> <input type="checkbox"/> ■ ■ ■	3
GB 274 Computer-Aided Decisions .....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ■	2
* > OSE 151 Business Communications I .....	■ ■ ■ ■	3
* OSE 152 Business Communications II .....	<input type="checkbox"/> ■ ■ ■ ■	3
> OSE 187 Beginning Word Perfect .....	■ ■ ■ ■	1
> OSE 194 Microsoft Windows .....	<input type="checkbox"/> ■ ■ ■ ■	1
----- General Electives .....	■ ■ ■ ■	5
TOTAL		53

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63  
TOTAL CREDITS REQUIRED FOR CERTIFICATE 30

>**CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">". (30 Sem. Hrs.).

### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. + If planning to transfer to a four-year institution (example: Northwood University 3+1 program), ACC 211 and other prerequisite courses may be required.
- 2. See page 91 for graduation requirements.
- 3. Delta College reserves the right to modify program requirements.



*"I love my job!"*

*"I think the friendliness of the people contributes to student success at Delta College. There is a positive environment which allows students, faculty and staff to be able to express themselves. This freedom I respect and honor."*

Richard Howden,  
Associate Professor of Business,  
has taught at Delta for 22 years



# COMPUTER NUMERICAL CONTROL TECHNOLOGY

## Associate in Applied Science Degree/Certificate

As a CNC Machine Tool Programmer/Operator, you will use computer driven machine tools such as lathes, mills, profilers, lasers, water jet, wire electrical discharge machines, tube benders, punches, and grinders to shape metals to precise dimension. Although some programmer/operators can work with a wide variety of CNC machine tools, most specialize in one or two types. Specific duties may include: studying blueprints, sketches; tool, fixture and machine set up; programming and editing; machine workpieces; inspecting, verifying, and certifying product for dimensional accuracy; light duty repair and maintenance of the CNC machine.

Suggested Sequence      Sem Hrs

### General Education Courses

ENG 111	College Composition I	■ ■ ■ □	3
ENG 113	Technical Writing	□ ■ ■ □	3
PE ---	Physical Activity Elective	■ ■ ■ ■	1
PE ---	Physical Activity Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government OR		
POL 111	American Government and Politics OR		
POL 212	State and Local Governments OR		
HIS 103	History of American Government	■ ■ ■ ■	3/4
PSY 101	Applied Psychology OR		
SPH 114	Interpersonal Communications OR	■ ■ ■ ■	3
SPH 112	Fundamentals of Oral Communications		

SUBTOTAL 14/15

### Basic Program Requirements

>CAD 114	Autocad Introduction	■ ■ ■ □	2
>CIS 114	Introduction to IBM PC OR		
CIS 118	IBM PC DOS	■ ■ ■ □	1
>CNC 160	Computer Numerical Control Programming I	□ ■ ■ □	3
>CNC 161	Computer Numerical Control Programming II	□ ■ ■ □	3
>CNC 201	CNC Tooling and Special Setups	■ ■ ■ □	2
CNC 284	CNC Practicum	□ ■ ■ ■	4
>DRF 104	Basic Industrial Drafting OR		
DRF 105	Beginning Industrial Drafting	■ ■ ■ □	3/4
>MS 112	Ferrous Heat Treatment	■ ■ ■ □	2
>MS 114	Machine Tools I	■ ■ ■ □	3
>MS 115	Machine Tools II	□ ■ ■ □	3
>MS 120	Machinist's Handbook	■ ■ ■ □	2
>MT 110	Machine Tool Calculations	■ ■ ■ □	5

SUBTOTAL 33/34

If you are an Associate degree candidate, you must select six courses from the CNC Core. (Four must be from the **On-Line Group** and one must be from the **Off-Line Group**.) 24

> If you are a Certificate candidate, you must select four courses from the CNC Core. (Three must be from the **On-Line Group**.) 16

### On-Line Programming/Operation

#### Beginning Advanced

CNC 211	CNC 251	Mitsubishi 410 EIA/ISO	□ ■ ■ ■	4
CNC 212	CNC 252	Heidenhain TNC-151	□ ■ ■ ■	4
CNC 213	CNC 253	OSP-5000 LG Control	□ ■ ■ ■	4
CNC 214	CNC 254	Anilam G EIA/ISO Control	□ ■ ■ ■	4
CNC 215	CNC 255	General Numeric 10TF Control	□ ■ ■ ■	4
CNC 216	CNC 256	Mazatrol M-2 Control	□ ■ ■ ■	4
CNC 217	CNC 257	JAPT 3J EIA/ISO Control	□ ■ ■ ■	4
CNC 218	CNC 258	Boston Digital SPC-II EIA/ISO	□ ■ ■ ■	4

### Off-Line Programming

#### Beginning Advanced

CNC 221	CNC 261	ACU. CARV	□ ■ ■ ■	4
CNC 222	CNC 262	E-Z CAM IV	□ ■ ■ ■	4
CNC 223	CNC 263	TM-APT-G	□ ■ ■ ■	4
CNC 224	CNC 264	Anicam	□ ■ ■ ■	4
CNC 225	CNC 265	Mastercam	□ ■ ■ ■	4
CNC 226	CNC 266	CAM M-2	□ ■ ■ ■	4
CNC 267		XL/NC	□ ■ ■ ■	4
CNC 228	CNC 268	Nicam IV	□ ■ ■ ■	4
CNC 229	CNC 269	Expedite 3D	□ ■ ■ ■	4
CNC 230		ACU. CARV	□ ■ ■ ■	4

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 71/73

TOTAL CREDITS REQUIRED FOR CERTIFICATE 45/46

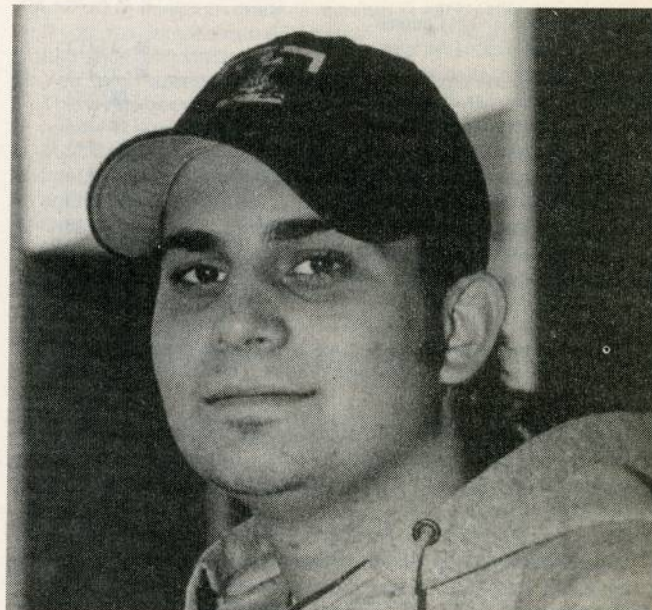
### Technical Electives Suggested for Enrichment

CNC 235	MHP Flexible Machining Cell		4
IS 110	Industrial Supervision		3
MT 220	Introduction to Fluid Power		3
ROB 101	Industrial Robotics		1

>**CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">" (45/46 Sem. Hrs.).

### NOTATIONS:

1. A waiting list is maintained for CNC core courses. For program details and to be put on the waiting list, see a counselor or instructor.
2. See page 91 for graduation requirements.
3. Delta College reserves the right to modify program requirements.



*"I Decided on Delta!"*

Larry Collicker



# CONSTRUCTION MANAGEMENT

## Associate in Applied Science Degree

The Construction Management program is designed to acquaint you with management/business operations and knowledge of the practices and procedures relating to the construction industry. The construction course will acquaint you with various materials, procedures, types of fabrication, and methods of resolution. Technical problem solving will be stressed.

The business components of this program will teach you basic business structure and practices. Such training is invaluable in the start-up and maintenance of a profitable construction business. Other avenues of employment can be sought in construction supervision, material representation, and material management and control.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
POL 103	Introduction to American Government <b>OR</b>		
POL 111	American Government and Politics <b>OR</b>		
POL 212	State and Local Governments <b>OR</b>		
HIS 103	History of American Government .....	■ ■ ■ ■	3/4
SPH 202	Oral Communications for Managers .....	■ ■ ■ ■	3
SUBTOTAL			8/9

<b>Business Management Courses</b>			
ACC 111	Introductory Accounting <b>OR</b>		
ACC 211	Principles of Accounting .....	■ ■ ■ ■	4
CIS 120	MicroComputers in Business <b>OR</b>		
CIS 133	Introduction to Computer Information Systems .....	■ ■ ■ □	3/4
*GB 131	Small Business Management I .....	■ ■ ■ ■	3
GB 153	Introduction to Business .....	■ ■ ■ □	3
GB 246	Supervision .....	□ ■ ■ ■	3
GB 251	Business Law I .....	□ ■ ■ ■	3
OSE 151	Business Communications I .....	■ □ □ □	3
OSE 152	Business Communications II .....	□ ■ ■ ■	3
SUBTOTAL			25/26

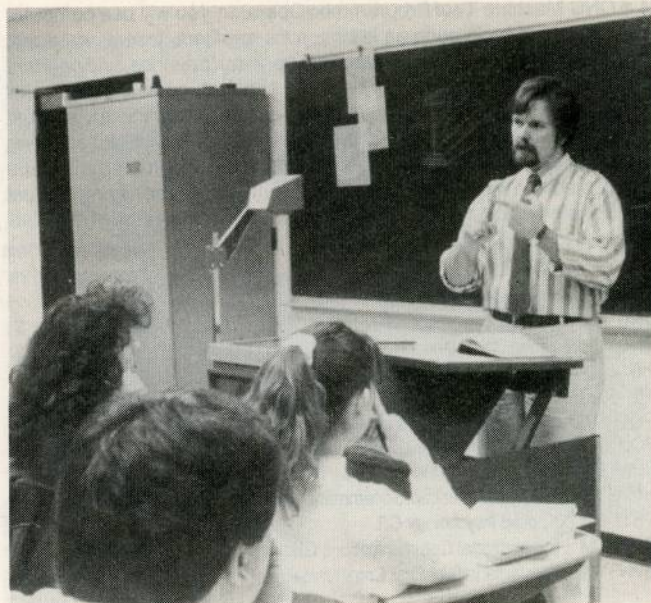
<b>Construction Management Courses</b>			
RC 101	Construction Print Interpretation .....	■ □ □ □	3
+RC 102	Building Materials .....	■ □ □ □	3
+RC 105	Building Site Surveying .....	□ ■ □ □	3
RC 106	Concrete & Foundations .....	□ ■ □ □	4
RC 108	Construction Safety .....	□ ■ □ □	2
RC 200	Construction Contracting Rules & Regulations .....	□ □ ■ □	3
+RC 202	Building Materials Estimation .....	□ □ ■ □	3
RC 206	Plumbing, Heating & Electrical Equipment .....	□ □ □ ■	3
RC 211	Elements of Structural Design .....	□ ■ □ □	3
*RC 212	Building System Components .....	□ □ □ ■	3
SUBTOTAL			30

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 63/65

### NOTATIONS:

\*A "C" (2.0) minimum grade is required in each asterisked course.

- +These courses are co-listed with Architecture Technology courses and can be taken as ARC courses; i.e., RC 109 = ARC 105.
- As a prerequisite to Residential Construction classes, you must have obtained 19 or better on the numerical skills/math portion of the ASSET test or have completed RC 113.
- If you are in the 3+1 Northwood University program, see your counselor for your course selection at Delta College during your third year.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.



*"I love my job!"*

*"I find it very enjoyable to be involved with professional teachers and interested students. The faculty are a well informed, diverse mix of people. I also enjoy the age spread of my students, usually anywhere from 18-78. It's interesting to see the chemistry between them."*

Terrence Kelly,  
Technical Division Chair & Associate Professor  
of Architecture and Construction,  
has taught at Delta for 8 years



# CRIMINAL JUSTICE

## OPTIONS: LAW ENFORCEMENT WITH BASIC POLICE TRAINING (B.P.T.) CERTIFICATION TRACK CORRECTIONS LAW ENFORCEMENT

### Associate in Applied Science Degree

The Delta College Criminal Justice program is designed to give you specialized knowledge of law enforcement combined with a broad general educational background. The program offers theoretical, practical, and technical instruction designed to meet an ever-increasing demand and continuous upgrading of personnel by law enforcement agencies. As a graduate of this program, depending on the option chosen, you would be prepared to seek employment as a police officer or in many non-officer (civilian) jobs such as: patrol and security guards, investigator for several government affiliated agencies or private investigation, or in corrections.

		Suggested Sequence	Sem Hrs
<b>General Education Core Courses</b>			
1.	CPS 125 Computer Literacy OR	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4
	CIS 133 Introduction to Computer Information System		
*	CJ 110 Introduction to Criminal Justice	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
	ENG 111 College Composition I	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
	ENG 112 College Composition II	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
1.	OSE 170 Keyboarding I: Keyboard	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2
	PE 101 Physical Fitness OR		
	PE 103 Physical Conditioning for Women OR		
	PE 105 Circuit Training	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1
	PE --- Physical Activity Elective	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1
	POL 103 Introduction to American Government OR		
	POL 111 American Government and Politics OR		
	POL 212 State and Local Governments OR		
	HIS 103 History of American Government	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3/4
	PSY 211 General Psychology	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	4
	SOC 211 Principles of Sociology	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
	SPH 112 Fundamentals of Oral Communication OR		
	SPH 114 Interpersonal Communications	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
	<b>SUBTOTAL</b>		<b>29/31</b>

#### Law Enforcement with Basic Police Training Option:

	BIO 111 Principles of Biology	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	4
*	CJ 111 Police Administration	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 112 Police Operations	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 210 Introduction to Criminal Investigation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
2.*	CJ 220 Crime Laboratory Techniques	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 250 Juvenile Offender	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 270 Evidence & Criminal Procedures	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 271 Criminal Law	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
4.*	CJ 101 Police Recruit Training	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	6
4.*	OSE 153 Police Report Writing	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1
4.*	PE 201 Self-Defense/Fitness	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2
4.*	PEH 168 Advanced First Aid/EM Care	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
	<b>SUBTOTAL</b>		<b>37</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 64/66

#### Law Enforcement without Basic Police Training Option:

	BIO 111 Principles of Biology	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	4
*	CJ 111 Police Administration	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 112 Police Operations	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 210 Introduction to Criminal Investigation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
2.*	CJ 220 Crime Laboratory Techniques	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 250 Juvenile Offender	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 270 Evidence & Criminal Procedures	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 271 Criminal Law	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
---	General Electives	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	6/8
	<b>SUBTOTAL</b>		<b>31/33</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/64

#### Corrections Option:

*	CJ 230 Introduction to Corrections	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 232 Client Relations in Corrections	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 233 Client Growth & Development	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 235 Correctional Institutions & Facilities	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 236 Community Based Corrections (Winter sem only)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
*	CJ 238 Legal Issues in Corrections	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
	PSY 241 Abnormal Psychology OR		
	CJ 250 Juvenile Offender	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
	SOC 215 Sociology of Minority Groups	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3
---	Electives	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7/9
	<b>SUBTOTAL</b>		<b>31/33</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/64

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
1. If you can demonstrate proficiency in these areas, you can substitute additional electives.
2. You may substitute a lab science other than Biology for CJ 220. This would be particularly useful for transferring to a 4-year school and helpful in the fulfillment of the MACRAO agreement.
3. MACRAO Agreement: It is recommended that if you are planning to transfer to a four-year college or university, you complete the MACRAO agreement requirements. The intent of this agreement is to ensure that students who complete the basic two-year requirements (general education requirements) at a signatory public community college will have satisfied the basic two-year requirements of the signatory four-year college. These basic two-year requirements include ENG 111/112 and 8 credits each in humanities, social science and science. For assistance in program planning to incorporate the MACRAO designation on your transcript, you are advised to contact a Delta College counselor.
4. CJ 101; OSE 153; PE 201; PEH 168 are taken concurrently and together make up the Basic Police Training (B.P.T.) Academy. (12 credits). Contact office of Criminal Justice for details (G131).
5. The Basic Police Training (B.P.T.) can be taken **only** after all of the other courses included for the degree have been successfully completed.
6. PE 201 fulfills the PE requirement for the Associate Degree. A waiver test for OSE 170 can be taken in F42 (Co-op office). If you are in the Basic Police Training (B.P.T.) certification track and have successfully completed the waiver test for OSE 170, you may graduate with 62 credits.
7. See page 91 for graduation requirements.
8. Delta College reserves the right to modify program requirements.



## Corrections Officer Academic Program Information

All Michigan State Corrections Officers hired are required to have 15 semester or 23 quarter hour college credits earned through one of the following options:

**Option I.** Five specific corrections courses as determined by the Correctional Officer's Training Council. Each course must be passed with a minimum of a "C" grade (2.0 GPA on a 4.0 scale). At Delta, these courses are CJ230, CJ232, CJ233, CJ235, CJ238 and are described in Section VI, Course Descriptions.

**Option II.** Fifteen credits in the following areas: Psychology, Sociology, Corrections, Criminal Justice, Guidance and Counseling, Educational Psychology, Family Relations. **Only the earning of college credit is required** in this option; therefore, the "C" grade minimum is **NOT** required.

**Note:** Fulfillment of OPTION I provides priority on the Department of Corrections employment list as compared to fulfillment of OPTION II, and employment will **ONLY** become available for qualified candidates who completed OPTION II after all the qualified candidates with OPTION I were considered. Since the need for Corrections Officers tends to fluctuate, it is recommended you contact the State regarding employment opportunities using OPTION II.

**Course Offerings:** It is anticipated that at least one section of each of the five courses will be offered in either the Fall and Winter Semesters. Spring/Summer Semester offerings will depend on need and instructor availability. The courses are offered in the evening only, with some Saturday offerings.

Upon successful completion of the five courses, you will receive a certificate of completion, and this should not be confused with completing a certificate program at Delta.

## CUSTOM TAILORING AND ALTERATIONS

### Certificate Program

This program will provide education and skill training in the clothing and fashion merchandising business field if you are seeking employment in tailoring occupations, retail fabric, and fashion merchandising. It is designed as a step-out option for employment or the certificate can be used to complete an Associate in Business Studies -- Clothing Specialist Program or Fashion Merchandising Program.

		Suggested Sequence	Sem Hrs
<b>Technical Courses</b>			
FM 110	Apparel Construction and Analysis .....	■ □	4
FM 120	Apparel Tailoring .....	■ □	4
FM 150	History and Dynamics of Fashion .....	■ □	3
FM 155	Textiles .....	■ □	3
FM 170	Fundamental Theories of Fashion Design & Merchandising .....	□ ■	3
FM 210	Apparel Pattern Drafting & Design .....	□ ■	4
FM 220	Advanced Apparel Tailoring .....	□ ■	3
FM 245	Advanced Textiles .....	□ ■	4
---	Co-Op or Elective .....	□ ■	2/3

TOTAL CREDITS REQUIRED FOR CERTIFICATE 30/31

#### NOTATIONS:

1. An Associate degree in Business Studies can be obtained, following the Clothing Specialist Program or Fashion Merchandising Program.
2. See page 91 for graduation requirements.
3. Delta College reserves the right to modify program requirements.



Ron Sharp and Solar Car "S-Car-Go"



# DENTAL ASSISTING

## Associate in Applied Science Degree/Certificate

As a graduate of this program, you will be prepared to assist the dentist with treatment procedures at chairside; produce diagnostic aids for interpretation by the dentist; provide oral health instructions for patients; perform laboratory procedures that are required for dental treatment; and perform basic office and record procedures. Upon successfully completing this program, you are eligible to take the certification exam of the American Dental Assistants Association to become a Certified Dental Assistant (CDA) and the Board of Dentistry, Michigan Department of Licensing and Regulation exam to become a Registered Dental Assistant (RDA). This Delta College program is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Post-secondary Accreditation and the U.S. Department of Education.



> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

### General Education Courses

	Suggested Sequence	Sem Hrs
ENG 111 College Composition I .....	■ ■ ■ ■	3
ENG 112 College Composition II .....	■ ■ ■ ■	3
<b>OR</b>		
OSE 151 Business Communications I .....	■ ■ ■ ■	(3)
OSE 152 Business Communications II .....	■ ■ ■ ■	(3)
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government <b>OR</b>		
POL 111 American Government and Politics <b>OR</b>		
POL 212 State and Local Governments <b>OR</b>		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
PSY 101 Applied Psychology <b>OR</b>		
PSY 211 General Psychology .....	■ ■ ■ ■	3/4
SPH 114 Interpersonal Communications .....	■ ■ ■ ■	3
<b>SUBTOTAL</b>		<b>17/19</b>

**Dental Assisting Courses Required:** These courses must be taken in the sequence specified.

### FALL SEMESTER ONLY

> * DA 110 Clinical Dental Assisting I .....	■ ■ ■ ■	4
> * DA 113 Oral Anatomy & Physiology .....	■ ■ ■ ■	4
> * BIO 101 Introduction to Anatomy & Physiology .....	■ ■ ■ ■	4
> * BIO 102 Microbiology & Infection Control .....	■ ■ ■ ■	2
> * HSC 140 Basic Medical Emergencies .....	■ ■ ■ ■	2

### WINTER SEMESTER ONLY

> * DA 120 Clinical Dental Assisting II .....	■ ■ ■ ■	5
> * DA 123 Dental Radiology .....	■ ■ ■ ■	4
> * DA 126 Dental Materials .....	■ ■ ■ ■	3
> * DA 127 Dental Health & Nutrition .....	■ ■ ■ ■	2

### SPRING SESSION ONLY

> * DA 129 Dental Office Management .....	■ ■ ■ ■	3
> * DA 128 Expanded Dental Functions .....	■ ■ ■ ■	2

### SPRING SEMESTER ONLY

> * DA 130 Dental Assisting Internship .....	■ ■ ■ ■	7
> * DA 133 Dental Assisting Internship Seminar .....	■ ■ ■ ■	2
<b>SUBTOTAL</b>		<b>44</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/64

TOTAL CREDITS REQUIRED FOR CERTIFICATE 44

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

- Due to the limited capacity of the college dental facilities and the specific requirements of the Commission on Accreditation of Dental and Dental Auxiliary Educational Programs, enrollment is limited. Each Fall Semester approximately 28 students will be accepted for enrollment in the sequential Dental Assisting courses. You may complete courses BIO 101, BIO 102, and HSC 140 with a minimum C (2.0) grade in each prior to enrollment in the Dental Assisting Sequential courses.
- Dental Assisting courses are offered day hours **only** and **must be taken together** in the sequence shown. You must achieve a minimum C (2.0) grade in each Dental Assisting course and in HSC 140, BIO 101 and BIO 102.
- If you successfully complete (C/2.0 grade in each) both BIO 131 and 132 prior to enrollment in DA courses, you will be able to waive BIO 101.
- Once admitted to the DA course sequence you will be required to have a negative TB test during your first semester and then be required to have a physical exam including a negative hepatitis carrier B test prior to enrolling in DA 120 (second semester of the Dental Assisting Sequential courses).
- In addition to tuition and textbook costs, you must purchase a laboratory coat, uniforms, clinic shoes, safety glasses, and provide transportation to dental office internship assignments and other facilities.
- You must have valid CPR Certification throughout the third semester of the Dental Assisting Sequential courses.
- You must achieve a "C" (2.0) or better grade in each DA course to be eligible to continue enrollment in this program.
- Validation is **not** required for **this** Allied Health program.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.



# DENTAL HYGIENE

## Associate in Applied Science Degree

As a graduate of this program, you will have the knowledge and skills to provide preventive and therapeutic treatments and services prescribed by and under the supervision of the dentist. Specific responsibilities vary, depending on the law of the state where you are employed, but generally include: scaling and root planing; application of topical fluoride and medicines for the prevention of tooth decay; taking impressions and preparing diagnostic models; expose, process and mount dental radiographs; provide instructions for patient self-care and nutritional counseling; and perform laboratory procedures. Upon successfully completing this program, you will be eligible to take the National, Regional and State Board Examinations for Dental Hygiene licensure, since Delta College's program is accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
+*BIO 131 Anatomy and Physiology I .....	■ ■ ■ ■	4
*BIO 132 Anatomy and Physiology II .....	■ ■ ■ ■	4
*BIO 203 General Microbiology .....	■ ■ ■ ■	4
# ENG 111 College Composition I .....	■ ■ ■ ■	3
# ENG 112 College Composition II .....	■ ■ ■ ■	3
*HSC 105 Medical Terminology .....	■ ■ ■ ■	2
*HSC 140 Basic Medical Emergencies .....	■ ■ ■ ■	2
# PE --- Physical Activity Elective .....	■ ■ ■ ■	1
# PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
# PSY 101 Applied Psychology OR		
# PSY 211 General Psychology .....	■ ■ ■ ■	3/4
# SOC 211 Principles of Sociology .....	■ ■ ■ ■	3
# SPH 114 Interpersonal Communications .....	■ ■ ■ ■	3
	<b>SUBTOTAL</b>	<b>36/38</b>

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 28 of this catalog for the required procedures.

### Clinical Course Sequence

#### First Semester (Fall)

*DH 110 Dental Infection Control .....	2
*DH 114 Oral Health .....	3
*DH 115 Clinical Techniques .....	4
*DH 116 Preventive Nutrition .....	2
*DH 117 Dental Anatomy .....	3
*DH 118 Anatomy of the Head and Neck .....	3
	<b>SUBTOTAL</b>
	<b>17</b>

#### Second Semester (Winter)

*DH 120 Periodontics .....	2
*DH 122 Oral Histology and Embryology .....	2
*DH 123 Dental Radiography .....	3
*DH 124 Pharmacology .....	3
*DH 125 Clinical Dental Hygiene I .....	6
	<b>SUBTOTAL</b>
	<b>16</b>

#### Third Semester (Spring Session)

*DH 131 Clinic II Seminar .....	2
*DH 135 Clinical Dental Hygiene II .....	4
	<b>SUBTOTAL</b>
	<b>6</b>

#### Fourth Semester (Fall)

*DH 211 Clinic III Seminar .....	1
*DH 212 Dental Specialties .....	1
*DH 213 Oral Pathology .....	3
*DH 214 Dental Therapeutics and Dev ices .....	4
*DH 215 Clinical Dental Hygiene III .....	6
*DH 216 Community Dentistry I .....	2
	<b>SUBTOTAL</b>
	<b>17</b>

#### Fifth Semester (Winter)

*DH 221 Clinic IV Seminar .....	2
*DH 225 Clinical Dental Hygiene IV .....	7
*DH 226 Expanded Hygiene Duties .....	2
*DH 227 Community Dentistry II .....	1
	<b>SUBTOTAL</b>
	<b>12</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE

104/106

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

# With a GPA of 2.0 over all

1. + Prior to enrolling in BIO 131, you must either successfully complete BIO 130 or pass the BIO 130 challenge exam.
2. It is highly recommended that you make an appointment with the Allied Health Counselor to go over the prerequisites and discuss your career choice prior to starting your prerequisites.
3. A maximum of 18 students will be accepted each Fall Semester for the Dental Hygiene courses.
4. Prerequisite qualifications are: a) high school graduate or GED equivalent; b) be admitted to Delta College; c) submit to Delta College complete transcripts from high school and other colleges attended; d) successfully complete prerequisite courses; e) follow the validation procedures as outlined on page 28 of this catalogue once the prerequisites are completed.
5. Before you finish your prerequisites you must observe two different Dental Hygienists performing their skills in two different dental offices for a minimum of 8 hours, or you can substitute one dental office by being a patient in Delta College's Dental Hygiene Clinic. These observations must be documented on the Observation Form which can be picked up in the Counseling Office. These forms must then be turned into the Allied Health Secretary F-226 prior to enrollment in the professional course sequence.
6. Dental Hygiene courses are offered day hours only and must be taken together in the sequence shown. You must achieve a minimum C (2.0) grade in each Dental Hygiene course to be eligible to continue in the program.
7. After enrolling in clinical, you must have a complete physical examination, including negative TB and Hepatitis carrier test. It is highly recommended that you talk to your family physician about receiving the Hepatitis Vaccine before you start the professional course sequence of Dental Hygiene.
8. You must maintain a current CPR certification throughout your enrollment in the Dental Hygiene courses plus you must maintain your certification to be a licensed Dental Hygienist in the State of Michigan.
9. In addition to tuition, fees and textbook costs, you must purchase laboratory coats, clinic shoes, uniform pants, safety glasses, and the Dental Hygiene Instrument Kit (additional costs approximate \$1,500).
10. Student Re-entry procedures are printed in the handbook given to all clinical students.
11. See page 91 for graduation requirements.
12. Delta College reserves the right to modify program requirements.



## DUAL DEGREES

### OPTIONS:

DENTAL ASSISTING/GENERAL MANAGEMENT  
DENTAL HYGIENE/GENERAL MANAGEMENT  
NURSING/GENERAL MANAGEMENT  
PHYSICAL THERAPIST ASSISTANT/GENERAL  
MANAGEMENT  
RADIOGRAPHY/GENERAL MANAGEMENT  
RESPIRATORY CARE/GENERAL MANAGEMENT  
SURGICAL TECHNOLOGY/GENERAL MANAGEMENT

### Associate in Applied Science Degree

AND

### Associate in Business Studies Degree

Dual Associate degrees are available in several health curricula with the General Management Program. Generally, the requirements are completed simultaneously; however, the business courses normally will be completed prior to beginning your clinical sequence. Your diploma will list both the Associate in Applied Science Degree and the Associate in Business Studies Degree.

In addition to completing all the courses for an approved health program (see above), you must complete a minimum of 24 additional credits from the courses listed below.

If you have no prior college degree you will have to earn a **minimum** of 86 credits to earn a Dual Degree (62 for the Health Degree and 24 for the Business degree).

If you have earned a degree previously you may not use courses from that degree to satisfy the requirements of a "Dual Degree". It is possible that your previous degree may have included one or more of the required business courses (GB 153, 245). You do not have to retake such classes, but must replace them from the list of approved business courses under the dual degree to complete an additional 24 credits for the Dual Degree.

#### Business Courses

	Sem
	Hrs
GB 153 Introduction to Business .....	3
*GB 245 Principles of Management .....	3

The other 18 credits are to be selected from the following courses:

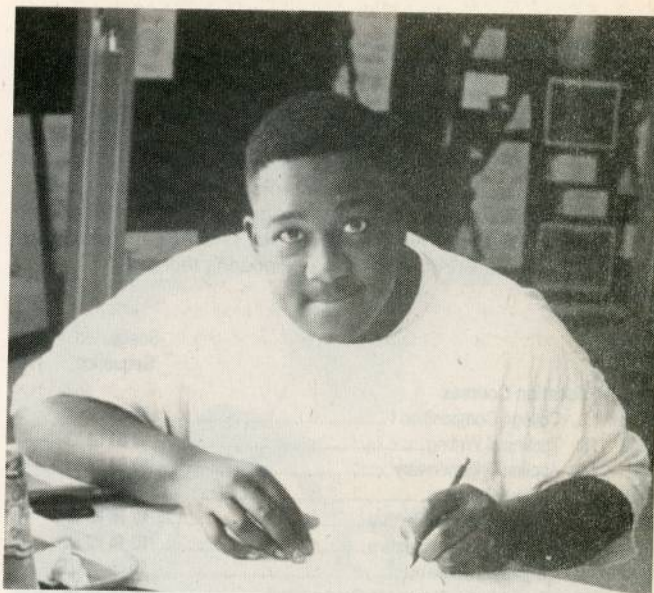
#ACC 111	Introductory Accounting .....	4
#ACC 211	Principles of Accounting I .....	4
ACC 212	Principles of Accounting II .....	4
CIS 120	Micro Computers in Business <b>OR</b>	
CIS 133	Introduction to Computer Information Systems .....	3/4
ECN 221	Principles of Economics I .....	4
GB 110	Business Math .....	3
GB 243	Principles of Marketing .....	3
GB 246	Supervision .....	3
GB 251	Business Law .....	3
GB 256	Human Resource Management I .....	3
OSE 151	Business Communications I .....	3
OSE 152	Business Communications II .....	3
OSE 170	Keyboarding I: Keyboard <b>OR</b>	2
OSE ---	Software course of your choice	

SUBTOTAL 24/25

CREDITS REQUIRED FOR A DUAL DEGREE VARY  
ACCORDING TO THE CHOSEN HEALTH CURRICULA

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. # Credit may only be earned in either ACC 111 or 211.
- 2. Student Re-entry procedures are printed in the handbook given to all clinical students.
- 3. See page 91 for graduation requirements.
- 4. Delta College reserves the right to modify program requirements.





# ELECTRONIC ENGINEERING TECHNOLOGY

## Associate in Applied Science Degree

As an electronic technician, you will design, build, test, trouble shoot, repair, and modify many types of electronic equipment. You may be an engineering aid in the laboratory, an electronic designer, or a field representative. Rather than emphasizing one or two titles, this program stresses the core of knowledge and skills common to this group of technical occupations. Also this program provides instruction in CAD, circuitry, and computer programming. This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. Accreditation by TAC/ABET expands the graduates' market ability nationally as engineering technicians.

### General Education Courses

		Suggested Sequence	Sem Hrs
ENG 111	College Composition I	■ □ □ □	3
ENG 113	Technical Writing	■ □ □ □	3
MTH 113	Applied Trigonometry	■ □ □ □	4
MTH 211	Applied Calculus	■ □ □ □	5
PE ---	Physical Activity Elective	■ ■ ■ ■	1
PE ---	Physical Activity Elective	■ ■ ■ ■	1
PHY 111	General Physics I	■ □ □ □	4
POL 103	Introduction to American Government	■ ■ ■ ■	3
MT 151	Approved Math/Science Elective	■ ■ ■ ■	3
SUBTOTAL			27

### Basic Program Requirements

CAD 114	AutoCAD Introduction	■ ■ ■ □	2
EET 100	Survey of EET	■ □ □ □	1
EET 110	Passive Circuit Analysis	■ □ □ □	6
EET 120	Digital Circuits	■ □ □ □	3
EET 131	Electrical Measurements	■ □ □ □	2
EET 210	Active Circuits	■ □ □ □	5
EET 211	Active Circuits II	■ □ □ □	5
EET 212	Computer Aided Circuit Analysis	■ □ □ □	2
EET 215	Electronic Control and Automation	■ □ □ □	5
EET 224	Computer Electronics I	■ □ □ □	3
EET 230	Soldering Techniques	■ □ □ □	1
EET 231	Electronic Fabrication	■ □ □ □	3
MT 150	Mechanical Principles in Electronic Design	■ □ □ □	2
# ---	Approved EET Elective	■ □ □ □	3
SUBTOTAL			43

### # Approved EET Electives

EET 216	Advanced Electronic Circuits		4
EET 222	Advanced Logic Circuits		3
EET 225	Computer Electronics II		3
MT 220	Introduction to Fluid Power		3

### + Approved Math/Science Electives

MTH 151/161	(to replace MTH 211 & Science Electives)		4
MTH 208	Elementary Statistics		3
MTH 231	Introduction to Quality Engineering Statistics		3
CHM 101	General Chemistry I		5
CHM 111	General/Inorganic Chemistry I		4
PHY 112	General Physics II		4
BIO 111	Principles of Biology		4
BIO 120	Introduction to Environmental Studies		4
GLG 111	Physical Geology		4

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 70

### NOTATIONS:

- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.

# ELECTRONIC SERVICE TECHNOLOGY

## Certificate Program

This program provides you with the background, knowledge and skills in the operation, service, and repair of basic electronic systems. As an electronic service technician, you will test, trouble shoot, repair, and modify many types of electronic equipment. You may be a bench service specialist, an electronic system repairer, or a field service representative. Rather than emphasizing one or two specialties, this program stresses the core of knowledge and skills common to this group of technical occupations. The goals of this program are to have you be able to give proper diagrams and information, trouble shoot, and repair basic electronic systems. This program provides instruction in tool usage, circuitry, computer usage, and documentation of work.

Suggested Sem  
Sequence Hrs

### General Education Courses

EST 101	Introduction to Electronic Service	■ □ □	2
EST 133	Electronic Service I	■ □ □	4
* EST 135	Electronic Service II	■ □ □	4
* EST 137	Electronic Service III	■ □ □	4
* EST 140	Digital Electronics I	■ □ □	3
* EST 142	Digital Electronics II	■ □ □	3
* EST 146	Basic Microprocessor Systems	■ □ □	3
* EST 150	Electronic Devices I	■ □ □	3
* EST 152	Electronic Devices II	■ □ □	3
* EST 156	Basic Electronic Systems	■ □ □	3
* EST 160	Practical Electronic Servicing	■ □ □	4
* MTH 107	Algebra I	■ □ □	3
TOTAL			39

TOTAL CREDITS REQUIRED FOR CERTIFICATE 39

### NOTATIONS:

- Except for EST 101 and 133, all other EST courses require a "C" grade in prior course to continue or instructor permission.
- Most courses in this program are sequential, not concurrent. MTH 107 and EST 101 are completed first, then EST 133 and EST 135 follow in order. Courses vary in length from 3 to 6 weeks.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.

## EMERGENCY MEDICAL TECHNICIAN ACADEMIC PROGRAM (Non-Degree)

The minimum requirements to be licensed as a Michigan EMT are the successful completion ("C"/2.0) grade or higher in EMT 101, EMT 102 and EMT 108, and the passing of the State of Michigan Basic EMT Exam (both written and practical portions). Employability with only a Basic EMT license is extremely limited and most EMT's in the Saginaw Valley area hold an Advanced EMT/Paramedic Michigan license.

Before you are admitted to the Basic EMT sequence, you must provide a current physical examination, which confirms you are free from communicable disease and capable of performing the duties necessary for the safe care of patients (physicals should be turned in to the College Health Office before beginning EMT classes). The health form is good for one year.

Emergency Medical Technician Courses	Cr. Hr.
EMT 101 Basic EMT	6
EMT 102 Basic Field Experience	1
EMT 108 Rescue and Extraction	1
Total	8

These courses are described in Section VI, Course Descriptions.



# ENVIRONMENTAL SCIENCE/ HAZARDOUS MATERIALS TECHNICIAN

## Associate in Applied Science Degree/ Certificate

Successful completion of the program will prepare you for employment as a hazardous materials technician, safety technician, solid waste technician, recycling technician, or as a team member in environmental consulting firms. Skills and knowledge that you should possess as a result of completing the program include: understanding of the specific safety and environmental regulations related to the work environment; familiarity with computers; basic understanding of chemical terminology; ability to read technical materials and translate what is read into action; ability to write comprehensible reports; ability to keep records; ability to make routine mathematical computations; understanding of how environmental regulations are formulated, and; understanding of the interrelated nature of environmental problems.



		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
>ENG111	College Composition I .....	■ ■ □ □	3
>ENG113	Technical Writing .....	□ ■ ■ □	3
GLG111	Physical Geology .....	□ ■ ■ ■	4
MTH119	Intermediate Algebra .....	□ ■ ■ □	4
MTH208	Elementary Statistics .....	□ □ ■ ■	3
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
POL103	Introduction to American Government .....	■ ■ ■ ■	3
SPH112	Fundamentals of Oral Communication <b>OR</b>		
SPH114	Interpersonal Communications .....	■ ■ ■ ■	3
2 ---	Electives .....	□ ■ ■ ■	5/6
	<b>SUBTOTAL</b>		<b>30/31</b>

<b>Basic Program Requirements</b>			
>BIO 110	Environmental Science .....	■ ■ □ □	4
>CHM101	General Chemistry <b>OR</b>		
>CHM111	General and Inorganic Chemistry I .....	■ ■ □ □	5/4
CHM221	Organic Biochemistry .....	□ □ □ ■	3
CHM222	Organic Biochemistry Laboratory .....	□ □ □ ■	1
>CPS125	Computer Literacy .....	■ ■ ■ ■	3
>ENV 100	Environmental Regulations .....	■ ■ ■ ■	3
1 >ENV150	Environmental Training .....	■ ■ ■ ■	6
ENV230	Instrumentation .....	□ □ ■ ■	3
>PHY101	Applied Physics .....	□ □ ■ ■	4
	<b>SUBTOTAL</b>		<b>31/32</b>

### ADDITIONAL COURSES REQUIRED FOR CERTIFICATE ONLY

3 >CHM145	The Language of Chemistry .....	■ □ □ □	1
3 >MTH107	Algebra I .....	■ □ □ □	3
	<b>SUBTOTAL</b>		<b>4</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63

TOTAL CREDITS REQUIRED FOR CERTIFICATE 34/35

> **CERTIFICATE OPTION:** A certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

1. ENV 150 is presented as a series of modules offered through Delta College Corporate Service, all of which must be completed prior to receiving academic credit. All training components are those required and detailed through OSHA Hazardous Material Training as well as other State and Federal regulations. Upon presentation of verification of completion of all modules to the chairperson of the Science Division, the student will receive 6 academic credits from Delta College. Course modules are as follows: 40 hour HAZWOPER TRAINING; 20 hour Confined Space Entry; 24 hour Emergency Response to Industrial Spills; 6 hour Hazardous Materials Shipping and Handling (hours represented are clock hours)
2. Electives: If you are considering transferring to a university, review the Associate in Science degree requirements in the catalog and see a counselor since requirements of various transfer schools differ.
3. If you have high school background in chemistry and math or ASSET scores that meet this objective you should consider higher level chemistry and math courses. This is particularly important for students who may wish to transfer to a university to pursue a baccalaureate degree. Consult a counselor for appropriate courses and waiver.



## FASHION MERCHANDISING

### Associate in Business Studies Degree

This program can lead to careers in fashion buying, fashion merchandising, fashion design, bridal consulting, fashion show coordinating, and fashion display. The merchandisers of fashion perform numerous jobs such as, buying, selling, fashion writing, coordination, fashion illustration, bridal consulting, fashion show coordination, display and promotion work and serving fashion and educational representatives for pattern companies, accessory, and fabric manufacturers.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
ART 115	Basic Design - 2 Dimensional .....	■ □ □ □	3
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
POL 103	Introduction to American Government .....	■ ■ ■ ■	3
PSY 101	Applied Psychology <b>OR</b>		
PSY 211	General Psychology .....	■ ■ ■ ■	3/4
<b>SUBTOTAL</b>			<b>11/12</b>

#### Basic Program Requirements

*CED 122	Cooperative Education .....	□ □ □ ■	3
CIS 133	Introduction to Computer Information Systems .....	■ ■ ■ ■	4
FM 150	History & Dynamics of Fashion .....	■ □ □ □	3
*FM 151	Display .....	□ □ □ □	3
*FM 155	Textiles .....	■ ■ ■ □	3
*FM 170	Fund Theories of Fashion Design & Merchandising .....	□ ■ □ □	3
*FM 240	Fashion Coordination .....	□ □ □ ■	3
GB 110	Business Math .....	■ ■ ■ ■	3
GB 143	Principles of Advertising .....	■ ■ ■ ■	3
GB 145	Principles of Sales .....	■ ■ ■ ■	3
GB 153	Introduction to Business .....	■ ■ □ □	3
GB 247	Principles of Retailing .....	□ □ □ □	3
*GB 248	Principles of Buying for Resale .....	□ □ □ ■	3
*OSE 151	Business Communications I .....	■ □ □ □	3
OSE 152	Business Communications II .....	□ ■ ■ ■	3
---	General Elective(s) .....	■ ■ ■ ■	4/5
<b>SUBTOTAL</b>			<b>49/50</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>			<b>62</b>

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. The above program is intended to prepare you for a career upon graduation from Delta College. If you plan to transfer to a four-year college, you should consult a counselor.
- 2. See page 91 for graduation requirements.
- 3. Delta College reserves the right to modify program requirements.

## FINANCIAL INSTITUTIONAL MANAGEMENT

### OPTIONS: BANKING MANAGEMENT CREDIT UNION MANAGEMENT

### Associate in Business Studies Degree

This program is designed to provide entry opportunities into the financial field as well as provide training for current employees who desire to increase and upgrade their skills and knowledge of finance. Job opportunities are available in banks, savings and loan associations, credit unions, and agencies within areas such as: commercial and installment loan departments; real estate mortgage departments; check processing; bank operations supervision; computer programming; auditing and accounting. These programs are offered in conjunction with A.I.B. (American Institute of Banking) and I.F.E. (Institute of Financial Education, and C.U.N.A. - Credit Union National Association).

**Financial Institution Management students must complete the required core courses listed below plus the courses listed in one of the areas of specialization.**

		Suggested Sequence	Sem Hrs
<b>Core Courses</b>			
CIS 133	Introduction to Computer Information Systems .....	■ ■ ■ ■	4
*ECN 221	Principles of Economics I .....	□ ■ ■ ■	4
GB 110	Business Math .....	■ □ □ □	3
GB 153	Introduction to Business .....	■ □ □ □	3
GB 243	Principles of Marketing .....	□ ■ ■ □	3
GB 245	Principles of Management .....	□ ■ ■ □	3
*OSE 151	Business Communications I .....	■ □ □ □	3
*OSE 152	Business Communications II .....	□ ■ □ □	3
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
PE ---	Physical Activity Elective .....	■ ■ ■ ■	1
POL 103	Introduction to American Government <b>OR</b>		
POL 111	American Government and Politics <b>OR</b>		
POL 212	State and Local Governments <b>OR</b>		
HIS 103	History of American Government .....	■ ■ ■ ■	3/4
<b>SUBTOTAL</b>			<b>31/32</b>

#### Banking Management Option

*ACC 211	Principles of Accounting I <b>OR</b>		
*AIB 103	AIB Accounting I .....	■ □ □ □	4/3
*ACC 212	Principles of Account II <b>OR</b>		
*AIB 104	AIB Accounting II .....	□ ■ □ □	4/3
*AIB 124	AIB Law & Banking .....	□ □ □ □	3
*AIB 160	Principles of Bank Operations .....	■ ■ □ □	3
*AIB 173	Consumer Lending .....	□ □ ■ ■	3
*AIB ---	Elective <b>OR</b>		
*ECN 222	Principles of Economics II .....	■ ■ ■ ■	3/4
*GB 251	Business Law I <b>OR</b>		
*AIB 124	Law and Banking .....	□ □ □ □	3
*GB 252	Business Law II .....	□ □ □ □	3
---	Electives .....	■ ■ ■ ■	7/10
<b>SUBTOTAL</b>			<b>31/32</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>			<b>62</b>

#### Credit Union Management Option

*ACC 211	Principles of Accounting I .....	■ ■ □ □	4
*CRM 160	Introduction to Credit Unions .....	■ □ □ □	3
CRM 201	Credit Union Fin. Counseling & Member Relations ...	□ □ □ □	3
CRM 212	Credit Union Accounting .....	□ ■ □ □	3
*AIB 173	Consumer Lending .....	□ □ □ □	3
*GB 251	Business Law .....	□ □ □ □	3
*GB 256	Human Resource Management I .....	□ □ □ □	3
---	Electives .....	■ ■ ■ ■	9
<b>SUBTOTAL</b>			<b>31</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>			<b>62</b>

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in the Credit Union Management Program in each asterisked course.
- 1. This program is intended to prepare you for a career upon graduation from Delta College. If you plan to transfer to a four-year college, you should consult a counselor.
- 2. See page 91 for graduation requirements.
- 3. Delta College reserves the right to modify program requirements.



# FIRE SCIENCE TECHNOLOGY

## OPTIONS:

**FIRE FIGHTER TECHNICIAN**  
**FIRE INVESTIGATION/PREVENTION**  
**FIRE SCIENCE TECHNOLOGY**  
**EMT**  
**INDUSTRIAL/COMMERCIAL SECURITY & SAFETY**  
**LEADERSHIP AND TRAINING**

## Associate in Applied Science Degree

This Associate degree program in Fire Science Technology is designed to provide vocational and technical skills which will provide you with educational credentials for employment or promotional opportunities. If you are seeking a career in the fire service, you will find new positions limited and placement highly competitive.

**Nature of Work:** Fire Science technology is an applied science that embraces a wide range of knowledge leading to the control or prevention of fire and the handling of hazardous materials. This program is designed for the entering college student, the professional fire fighter, and persons employed in a broad range of occupations related to fire science and safety. Technical competency prepares you for managerial and leadership positions in municipal, industrial, or business entities.

**Fire Fighter Technician:** As a Fire Fighter, you will respond to emergency calls, control and extinguish fires, mitigate hazards, protect life and property, and maintain equipment. You will be responsible for proper use and maintenance of equipment, educating the public, responding to emergencies, and developing pre-incident plans to protect the community against loss of life and property.

**Fire Investigation/Prevention:** As a Fire Inspector, you will be involved in education, enforcement, engineering, and fire investigation. Your work will involve fire safety education, inspecting and enforcing fire codes, plan review, testing of fire protection systems, maintaining exitways, inspecting flammable liquid storage, determining cause and origin of fires, and preserving evidence, and testifying in arson cases.

**EMT:** As an Emergency Medical Technician you will provide basic life support skills in the field such as patient evaluation, respiratory and cardiac care, psychological care, auto extrication, trauma care, and transportation.

**Industrial/Commercial Security and Safety:** You will perform inspections of industrial and commercial buildings to detect fire and safety hazards, and make recommendations for improvements for loss prevention management. Your duties will include examining interiors and exteriors of industrial settings for violation of federal, state, and local requirements.

**Leadership & Training:** You will provide the command function for the Fire Service. Responsibilities include strategy and tactics, size-up and attack, developing action plan, safety, and overall management of emergency scenes.

Suggested  
Sequence      Sem  
                                 Hrs

### General Education Core Courses

CPS 125	Computer Literacy OR				
CIS 133	Introduction to Computer Information Systems	■	■	■	3/4
ENG 111	College Composition I	■	■	■	3
ENG 112	College Composition II OR				
ENG 113	Technical Writing	■	■	■	3
#PE ---	Physical Activity Elective	■	■	■	1
#PE ---	Physical Activity Elective	■	■	■	1
POL 103	Introduction to American Government OR				
POL 111	American Government and Politics OR				
POL 212	State and Local Governments OR				
HIS 103	History of American Government	■	■	■	3/4
PSY 101	Applied Psychology OR				
SPH 114	Interpersonal Communications OR	■	■	■	3
SPH 112	Fundamentals of Oral Communication				
SUBTOTAL					17/19

### Fire Science Core Courses

FST 101	Introduction to Fire Science	■	■	■	3
FST 102	Fireground Tactics	■	■	■	3
FST 103	Building Materials to Construction	■	■	■	3
FST 104	Arson Awareness OR				
FST 230	Fire Safety Education	■	■	■	3
FST 105	Hazardous Materials	■	■	■	3
FST 107	Fire Protection Systems I	■	■	■	3
SUBTOTAL					18

### I. Fire Fighter Technician Option

FST 111	Fire Fighter IA	■	■	■	4
FST 112	Fire Fighter IB	■	■	■	4
FST 211	Fire Fighter IIC	■	■	■	4
FST 212	Fire Fighter IID	■	■	■	4
+ ---	General Electives	■	■	■	11
SUBTOTAL					27
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63					

### II. Fire Investigation/Prevention Option

CJ 210	Introduction to Criminal Investigation	■	■	■	3
FST 104	Arson Awareness	■	■	■	3
FST 224	Fire Investigations	■	■	■	3
FST 230	Fire Safety Education	■	■	■	3
FST 231	Fire Service Law	■	■	■	3
+ ---	General Electives	■	■	■	15
SUBTOTAL					30
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63					

### III. Fire Science Technology Option

@ ---	Approved Electives	■	■	■	16
---	General Electives	■	■	■	10/11
SUBTOTAL					26/27
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/64					

@ Approved Fire Science Technology Electives can be combination of courses from any of the other 5 options.

### IV. EMT Option

*EMT 101	Basic EMT I	■	■	■	6
*EMT 102	Basic EMT Field Experience	■	■	■	1
*EMT 108	Rescue & Extrication	■	■	■	1
+ ---	General Electives	■	■	■	19
SUBTOTAL					27
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63					

### V. Industrial/Commercial Security and Safety Option

CHM 101	General Chemistry I OR				
CHM 111	General and Inorganic Chemistry I	■	■	■	4/5
CJ 182	Introduction to Security	■	■	■	3
FST 205	Hazardous Materials II	■	■	■	3
FST 207	Fire Protection Systems II	■	■	■	3
IS 118	Industrial Safety	■	■	■	2
+ ---	General Electives	■	■	■	11/12
SUBTOTAL					26/28
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/64					

### VI. Leadership & Training Option

IS 110	Industrial Supervision OR				
FST 201	Supervision & Leadership	■	■	■	3
FST 202	Company Management	■	■	■	3
FST 203	Fireground Management	■	■	■	3
FST 204	Fire Science Instructional Methodology	■	■	■	3
FST 230	Fire Safety Education	■	■	■	3
+ ---	General Electives	■	■	■	12/15
SUBTOTAL					27/30
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63					

### + Recommended Electives

MTH 100	Pre-Algebra Math				2
CJ 187	Current Issues in Security				3
IS 120	Supervisor/Employee Relations				3
PHO 101	Photography I				3

### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. # Recommended are PE 101, 150, 151, 152 or 153.
- 2. Before being admitted to the Delta College Basic EMT sequence, you must provide evidence of completion of a recent physical exam. This exam confirms that you are free of communicable diseases, and capable of performing duties necessary for safe patient care. The minimum requirement to be licensed as a Michigan EMT is successful completion of the Delta College courses EMT 101, 102, and 108 with "C" minimum grades and the passing of the State of Michigan Basic EMT exam. Other students who are enrolled in the Fire Science program and hold a current EMT license may receive credit by presenting a copy to the Technical Department Chairperson.
- 3. See page 91 for graduation requirements.
- 4. Delta College reserves the right to modify program requirements.



# GRAPHIC ARTS TECHNOLOGY

## Associate in Applied Science Degree/Certificate

Lithography or photo offset printing is the dominate method of printing. Today lithographers photograph or scan the material to be printed and make a printing plate from the film which, when inked, is transferred to a rubber-covered cylinder to transfer the ink onto the paper. As a Lithographer, you will be responsible for a variety of printing activities ranging from photographing copy and pictures to making the final printing plates. In a small shop, you may handle every step in the printing process, but lithographic workers usually tend to specialize in jobs such as camera operator, artist, stripper, platemaker, or computer graphics.

As a camera operator, you begin the process of making the plates by photographing and developing negative of the material to be printed.

As an artist, you will retouch the negatives to sharpen or reshape images. You will use chemicals, dyes and special tools and must know the characteristics of all types of paper.

As a film assembly person (stripper), you will cut the film to arrange and assemble the negatives onto layout flats which are used to make the plates. As a graphic designer, you may use computers in this process also.

As a platemaker, you will cover the surface of a flat piece of metal with a coating of photosensitive chemical or use pre-coated plates, put the assembled flats on top of the plate and expose to light. This produces the printing plate.

### General Education Courses

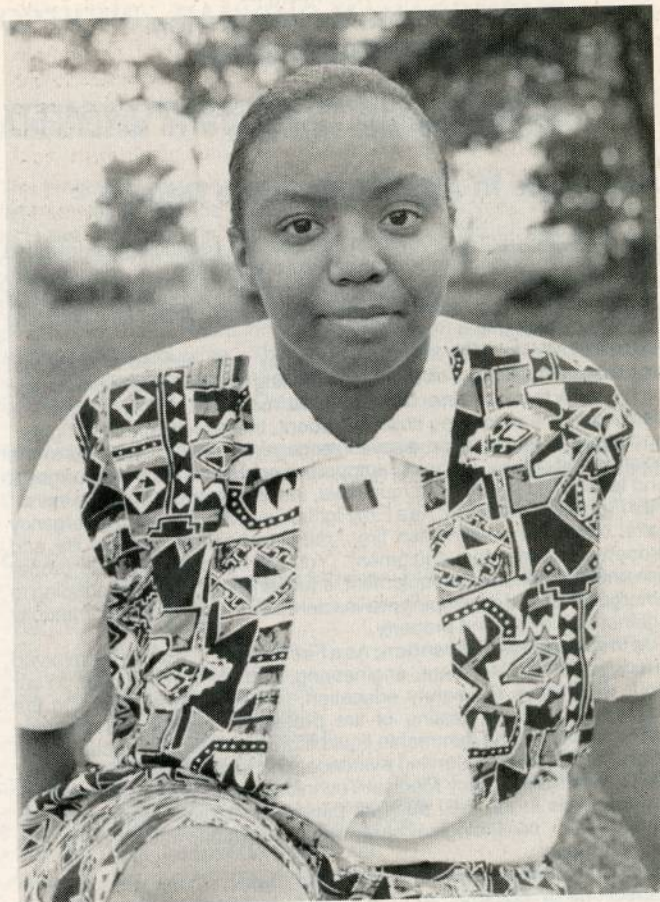
	Suggested Sequence	Sem Hrs
CHM 101 General Chemistry I OR	■ ■ ■ ■	4/5
CHM 111 General and Inorganic Chemistry I .....	■ □ □ □	3
ENG 111 College Composition I .....	■ ■ ■ ■	3
ENG 112 College Composition II OR	■ ■ ■ ■	3
ENG 113 Technical Writing .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government OR	■ ■ ■ ■	3/4
POL 111 American Government and Politics OR	■ ■ ■ ■	3/4
POL 212 State and Local Governments OR	■ ■ ■ ■	3/4
HIS 103 History of American Government .....	■ ■ ■ ■	3
>SPH 112 Fundamentals of Oral Communication OR	■ ■ ■ ■	3
>SPH 114 Interpersonal Communications .....	■ ■ ■ ■	3
# --- --- General Elective .....	■ ■ ■ ■	3
<b>SUBTOTAL</b>		<b>21/23</b>

### Technology Courses

>DRF 101 Drafting for Graphic Arts .....	■ □ □ □	1
>GAT 100 Introduction to Graphic Arts .....	■ □ □ □	4
>GAT 110 Pre-Production Graphic/Film Assembly I .....	■ ■ □ □	5
>GAT 112 Pre-Production Graphic/Film Assembly II .....	■ □ ■ □	6
>GAT 222 Desktop Publishing for GAT I .....	■ □ □ □	3
>GAT 224 Desktop Publishing for GAT II .....	■ □ □ □	3
GAT 226 Desktop Publishing for GAT III .....	■ □ □ □	3
GAT 230 Computer Graphics for GAT .....	■ ■ □ □	2
GAT 240 Offset Press Fundamentals I .....	■ □ □ □	3
GAT 242 Offset Press Fundamentals II .....	■ □ □ □	3
># --- --- General Electives .....	■ ■ ■ ■	5
# --- --- General Elective .....	■ ■ ■ ■	3
<b>SUBTOTAL</b>		<b>41</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/64

TOTAL CREDITS REQUIRED FOR CERTIFICATE 30



### # Suggested Electives

ARC 110 CAD System .....	2
ART 111 Drawing I .....	3
ART 115 Basic Design 2D .....	3
ART 221 Graphic Design .....	3
ART 281 Screen Printing .....	3
MTH 119 Intermediate Algebra (or higher math) .....	4
OSE 170 Keyboarding I: Keyboard .....	2
OSE 197 DPT Layout .....	2
PHO 102 Photography I .....	3
PHO 201 Photography II .....	3

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

### NOTATIONS:

1. GAT 110 and 112 offered at Dow High School in Midland.
2. Most of the GAT classes are offered in the evening.
3. See page 91 for graduation requirements.
4. Delta College reserves the right to modify program requirements.



# INDUSTRIAL SUPERVISION

## Associate in Applied Science Degree

As a supervisor, you will basically be responsible for the output of other workers and for maintaining work schedules, production, safety, and employee records pertaining to your industrial plant department. Employers generally will choose people for supervisory positions who have experience in their industry, job related skills, and leadership qualities. Therefore, most supervisors rise through the ranks and completion of this program alone will not ensure employment as a supervisor in an industrial plant. The main emphasis of this program is to provide you, as a currently employed supervisor or aspiring supervisor, with knowledge of supervisory responsibilities pertaining to management skills.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
ENG 111 College Composition I .....	■ □ □ □	3
ENG 113 Technical Writing .....	□ □ □ □	3
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
SPH 112 Fundamentals of Oral Communication OR		
SPH 114 Interpersonal Communications .....	■ ■ ■ ■	3
SUBTOTAL		14
<b>Business and Technology Courses</b>		
IS 110 Industrial Supervision .....	■ ■ □ □	3
IS 118 Industrial Safety .....	■ ■ □ □	2
IS 120 Supervisor-Employee Relations .....	■ ■ □ □	3
MFG 111 Manufacturing Processes .....	□ ■ ■ ■	3
QA 240 Quality and Productivity Management .....	□ □ ■ ■	3
QA 241 Six Tools of SPC .....	□ □ ■ ■	1
# --- --- Computer Electives .....	■ ■ ■ ■	3
--- --- General Electives .....	■ ■ ■ ■	12
# --- --- Supervisor Skills Electives (Approved Courses only) .	■ ■ ■ ■	6
# --- --- Technical Electives .....	■ ■ ■ ■	12
SUBTOTAL		48

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63

# **Suggested Technical Electives:** Courses with codes MFG, ROB, IS, MT, MS, DRF, CAD or CNC.

### Suggested Computer Electives

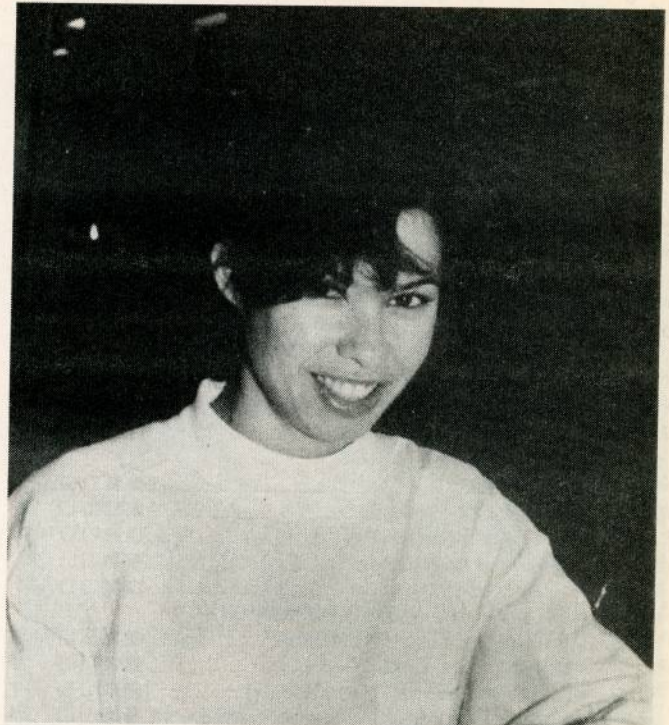
CIS 133 Introduction to Computer Information Systems .....	4
CIS 134 Lotus 1-2-3 .....	3
CIS 265 Introduction to Computer Programming .....	3
CPS 125 Computer Literacy .....	3

### Approved Supervisor Skills Electives

ECN 221 Principles of Economics I .....	4
GB 153 Introduction to Business .....	3
GB 231 Industrial Relations .....	3
PSY 101 Applied Psychology .....	3
SOC 211 Principles of Sociology .....	3

### NOTATIONS:

- Up to 10 credits may be granted for work experience as an Industrial Supervisor. Contact the Testing/Assessment Office at Delta.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.



*"I Decided on Delta!"*

Wendi Makrionis



# IN-HOME EDU-CARE SPECIALIST

## Associate of Applied Science Degree/ Certificate

As an In-Home Edu-Care Specialist, you will be a trained in-home child care professional who works as part of a family team to provide for the child's physical, emotional, educational, social and recreational needs. You should gain the respect, confidence, and cooperation of the children, maintain positive discipline, provide a safe and challenging environment, and deal calmly with emergency situations. Physically, you must maintain good health and be able to stoop, kneel, crouch, and crawl. Good vision and hearing is necessary, as well as being able to lift and carry children. You should enjoy working with children in a one-on-one situation. You must be responsible, nurturing, and able to work independently, yet cooperatively within a family setting.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
BIO 111	Principles of Biology .....	■ ■ □ □	4
ENG111	College Composition I .....	■ □ □ □	3
ENG112	College Composition II .....	□ ■ □ □	3
PE ---	Physical Activity Elective .....	■ ■ □ □	1
PE ---	Physical Activity Elective .....	■ ■ □ □	1
POL103	Introduction to American Government <b>OR</b>		
POL111	American Government and Politics .....	■ ■ □ □	3/4
1. ---	Humanities Electives .....	■ ■ □ □	8
-----	Science Electives (other than Biology) .....	■ ■ □ □	4
>2.# ---	Social Science Elective (other than Political Science) .....	■ ■ □ □	2/4
	<b>SUBTOTAL</b>		<b>29/32</b>

### Basic Program Requirements

>*	IHE 111	Introduction to In-Home Edu-Care Specialist I .....	□ □ ■ ■	3
>*	CD 113	Interaction with Young Children .....	□ □ ■ ■	3
>*	CD 114	Child Development I .....	□ □ ■ ■	3
>3.	CD 115	Child Development II .....	□ □ ■ ■	3
>*	CD 116	Families in the American Culture .....	□ □ ■ ■	3
>*	IHE 117	In-Home Edu-Care Specialist II .....	□ □ ■ ■	4
>*	CD 160	Introductory Practicum in Child Development .....	□ □ ■ ■	2
>*	IHE 161	Practicum As In-Home Edu-Care Specialist .....	□ □ ■ ■	2
>*	ED 107	Books for Preschool <b>OR</b>		
>*	LIT 251	Children's Literature .....	□ □ ■ ■	3/4
>*	PEH165	Community First Aid .....	□ □ ■ ■	1
	<b>SUBTOTAL</b>			<b>27/28</b>

### # Recommended Electives

----	Select from the following .....	■ ■ ■ ■	2-6
ART113	Art Education <b>OR</b>		
CPS125	Computer Literacy <b>OR</b>		
ENG---	Elective (Based on Asset) <b>OR</b>		
MUS100	Elements of Music <b>OR</b>		
PEH226	Teaching of Elementary Physical Education <b>OR</b>		
ED 101	Education of the Exceptional Child <b>OR</b>		
PSY211	General Psychology		

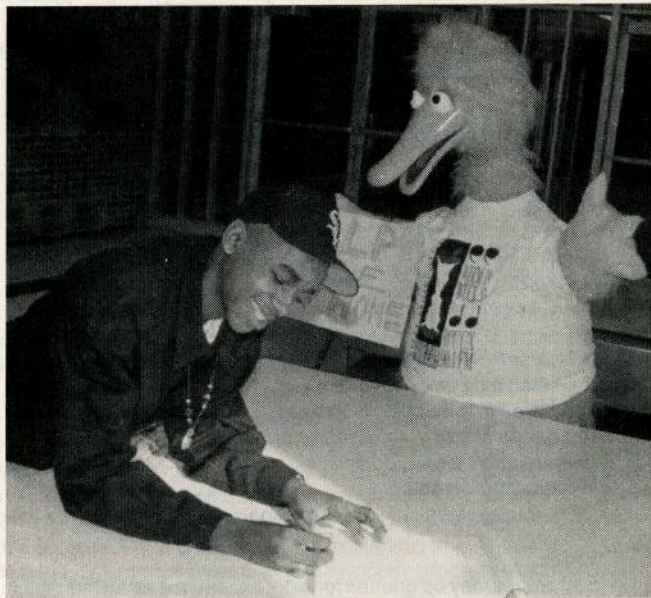
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62

TOTAL CREDITS REQUIRED FOR CERTIFICATE 30

\* A "C" (2.0) minimum grade is required in each asterisked course.  
> **CERTIFICATE OPTION** - A certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

1. Suggested Elective: Humanities: SPH 114 Interpersonal Communications
2. Suggested Elective: Social Science: If you are following the Certificate option, you are only required to take 3 credit hours. PSY 101 Applied Psychology is highly recommended.

3. PSY 223 may be substituted for CD 115. Credit may be earned in CD 115 or PSY 223 but not in both.
4. IHE 111, CD 113, CD 114, and CD 160 are to be taken in a block.
5. IHE 117, CD 115, CD 116 and IHE 161 are to be taken in a block.
6. A Child Development/IHE information session is usually held in August. Once you have been identified as a Child Development or IHE student, you will receive a letter from the coordinator inviting you to an informational session. **It is necessary for all child development students to attend.**
7. The Certificate may be expanded upon to earn an Associate in Applied Science degree in the In-Home Edu-Care Specialist Program.
8. You will be required to submit a health appraisal signed by a licensed physician declaring, to the best of the physician's knowledge, that you are physically capable of performing the duties that are required for the safe care of children. Also, you must submit evidence of freedom from communicable tuberculosis.
9. You may be required to sign a document asking whether you have ever been convicted of an offense other than a minor traffic violation and whether you have ever been involved in abuse or neglect of children.
10. If you want to transfer to another college to pursue a Baccalaureate degree in pre-school or elementary education, you are advised to consult with a counselor prior to enrollment in this program. Delta College is not responsible for program requirements and student acceptance by transfer colleges.
11. CD 116 counts towards the Social Science requirements.
12. See page 91 for graduation requirements.
13. Delta College reserves the right to modify program requirements.





## Associate in Business Studies Degree

As an interior designer, you will help make our living, working and playing areas more attractive and useful. You may help clients select furniture, draperies, other fabrics, floor coverings, and accessories, as well as estimate what services or furnishings will cost. The main purpose of designers in retail stores is to help sell the store's merchandise. When you begin interior designing, you will usually serve a training period, either with design firms, in department stores, or in furniture stores. You may act as a receptionist, as a shopper with the task of matching materials or finding accessories, or as a stockroom assistant, assistant decorator, or a junior designer.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
PE --- Physical Activity Elective .....	■ ■ ■ ■		1
PE --- Physical Activity Elective .....	■ ■ ■ ■		1
POL 103 Introduction to American Government <b>OR</b>			
POL 111 American Government and Politics <b>OR</b>			
POL 212 State and Local Governments <b>OR</b>			
HIS 103 History of American Government .....	■ ■ ■ ■		3/4
PSY 101 Applied Psychology <b>OR</b>			
PSY 211 General Psychology .....	■ ■ ■ ■		3/4
SUBTOTAL			8/10

### Business Courses

* ARC 105 Architectural Drafting I .....	■	□	□	□	4
* CED 122 Cooperative Education/ID .....	□	□	□	■	3
* FM 155 Textiles .....	■	□	□	□	3
* GB 110 Business Math .....	■	□	□	□	3
GB 145 Sales .....	□	■	□	□	3
GB 153 Introduction to Business .....	■	□	□	□	3
GB 247 Principles of Retailing .....	□	□	□	■	3
* ID 100 Introduction to Interior Design .....	■	□	□	□	3
* ID 170 Design Elements .....	□	■	□	□	4
* ID 200 Space Analysis & Presentation <b>OR</b> .....	□	■	□	□	3
* ARC 200 Spatial Analysis and Presentation					
* ID 210 Furniture .....	□	■	□	□	3
* ID 230 Applied Interior Design .....	□	□	□	■	3
ID 240 Contract Design/Commercial I .....	□	□	■	□	2
ID 241 Contract Design/Commercial II .....	□	□	□	■	2
ID 245 Design Trends .....	□	□	□	■	2
OSE 151 Business Communications I .....	□	■	□	□	3
OSE 152 Business Communications II .....	□	□	■	□	3
--- --- General Elective(s) .....	■	■	■	■	4
SUBTOTAL					54

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/64

### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. This Program is not intended to transfer to a four-year college or university. It is designed for students who want immediate employment after graduation from Delta.
- 2. ID 250 Seminar in Interior Design (2 credits) and ID 251 Merchandise Mart Experience (1 credit) are optional but encouraged.
- 3. See page 91 for graduation requirements.
- 4. Delta College reserves the right to modify program requirements.



*"I Decided on Delta!"*

Janet Whitley



# INTERNATIONAL STUDIES

## OPTIONS: WITHOUT FOREIGN LANGUAGE SKILLS WITH FOREIGN LANGUAGE SKILLS

### Certificate Program

While pursuing your individual program of studies as a Delta College student, you can earn an "add-on" **Certificate in International Studies** by successfully completing applicable courses from designated sets (A, B, C) of present Delta courses (or their equivalents). This program is designed to: 1) provide students a wider and deeper range of international awareness and knowledge; 2) promote an interest in other cultures and places; 3) promote an interest in foreign languages; 4) lay the groundwork for future international learning options for you as a Delta graduate, and 5) enhance employment opportunities. The Certificate in International Studies is an "add-on" to the credential for your present program of studies. Courses/credits you already have may be applicable toward the certificate requirements.

#### Basic Certificate Program Requirements

* GEO 113 World Cultural Geography .....	4	Sem
* HIS 112 Survey of Later Western Civilization .....	4	Hrs
* --- Required - Choose from Set B courses .....	6	
<b>SUBTOTAL</b> .....	<b>14</b>	

#### OPTION 1 - WITHOUT FOREIGN LANGUAGE SKILLS

* --- 3 courses - any combination from Sets A, B, C .....	10
<b>OPTION 1 TOTAL</b> .....	<b>24</b>

#### OPTION 2 WITH FOREIGN LANGUAGE SKILLS

* --- Foreign Language, 8 cr. (see Set A) .....	8
* --- 1 course - from Set B or C .....	2/3
<b>OPTION 2 TOTAL</b> .....	<b>24/25</b>

See below for sets A, B, and C of designated courses:

#### SET A:

**Foreign Languages (8 cr. required for Option 2). A two semester sequence is highly recommended.**

FR --- French .....	4
GE --- German .....	4
RUS --- Russian .....	4
SPA --- Spanish .....	2/4

#### SET B:

**Broad scope Global/International courses (some not offered every semester)**

ECN 268 International Studies in Economics .....	4
GB 265 International Business .....	3
GEO 111 General Physical Geography .....	4
GEO 255/ Third World Development .....	4
SOC 265 .....	
HIS 111 Survey of Early Western Civilization .....	4
HIS 232 History of Russia .....	3
POL 221 Comparative Government .....	3
POL 225 International Relations .....	3
1. SOC 231 Cultural Anthropology (is highly recommended) .....	3

#### SET C:

**Specialized Global/International courses and/or NOT regularly offered courses:**

AGR 205 Agricultural Marketing I: Domestic and Global .....	3
AGR 206 Agricultural Marketing II: Domestic and Global .....	3
ART 154 Arts of Africa and the Afro-America .....	1

BIO 230/ Physical Anthropology/Archaeology .....	4
SOC 230 .....	
BIO 268 International Studies in Biology .....	4
ECN 268 International Studies in Economics .....	4
GB 268 International Studies in Business .....	4
GEO 105 Human Geography .....	4
GEO 222 Geography of Asia .....	3
GEO 223 Geography of Europe .....	3
GEO 226 Geography of the U.S. and Canada .....	3
GEO 260 Geography of the Pacific Islands .....	3
GEO 262 Geography of the Canadian Shield .....	1
GEO 264 Geography of the Western U.S. & Canada .....	3
GEO 268 International Studies in Geography .....	4
GLG 268 International Studies in Geology .....	4
HIS 214 Pre-European African History .....	3
HIS 217 Introduction to La Raza (Mexican-American) Studies .....	3
HIS 218 Heritage: Civilization and the Jews .....	2
HIS 268 International Studies in History .....	4
HIS 275 The Vietnam War .....	3
IHU 161 International Projects in Cross Cultural Learning <b>OR</b> .....	1
SOC 161 International Projects in Cross Cultural Learning .....	
IHU 162 International Projects in Cross Cultural Learning <b>OR</b> .....	2
SOC 162 International Projects in Cross Cultural Learning .....	
LIT 241 Introduction to Mythology .....	3
LIT 242 British Literature .....	3
LIT 243/ Literary Geography of the Third World .....	4
GEO 243 .....	
LIT 245 Biblical Literature: Old Testament .....	3
LIT 246 Biblical Literature: New Testament .....	3
LIT 268 International Studies in Literature .....	1-4
MUS 211 Music History I .....	3
MUS 212 Music History II .....	3
POL 222 Middle East: Government & Politics .....	3
POL 229 Political Terrorism .....	3
POL 250 Introduction to British Government .....	3
POL 268 International Studies in Political Science .....	4
POL 275 The Vietnam War .....	3
ARC 101/ Materials and Methods of Construction .....	3
RC 102 .....	
SOC 230/ Physical Anthropology/Archaeology .....	4
BIO 230 .....	
SOC 235 Myths of the World .....	3
SOC 240 Sociology of Sex and Gender .....	3
SOC 268 International Studies in Sociology .....	4
SOC 271 Religion and Society .....	3
SPA 101 Hispanic Civilizations .....	2
SPA 150 Central Mexico .....	2
SPA 151 Mayan Mexico .....	2
SPA 275 Introduction to Spanish Fiction .....	3
<b>TOTAL CREDITS REQUIRED/CERTIFICATE</b> .....	<b>24</b>

\* A "C" minimum grade is required in each asterisked course.

1. SOC 231 - Cultural Anthropology - is a highly recommended "Basic Program" elective.
2. The semester hours for the Certificate in International Studies are calculated by adding the TOTAL hours earned from successful completion of the courses listed as Basic Certificate Program Requirements, and courses from Sets A, B, or C (or their equivalents) as appropriate for any individual student.
3. Courses used for basic requirements can not be used to satisfy additional requirements.
4. Questions regarding this program may be directed to the Humanities Division Chair or the Counseling Center.
5. See page 91 for graduation requirements.
6. Delta College reserves the right to modify program requirements.



# LEGAL ASSISTANT

## Associate in Business Studies Degree/ Certificate

Not all legal work requires a law degree. In recent years, lawyers have increasingly used legal assistants, also called "Paralegals" or "Legal Technicians," to provide legal services to more persons at less cost. As a legal assistant you will work directly under the supervision of a lawyer. While the lawyer assumes responsibility for the legal assistant's work, you will often be allowed to perform all the functions of a lawyer other than accepting clients, setting fees, giving legal advice, or presenting a case in court. You will generally do background work for the lawyer and help a lawyer prepare litigation for trial by investigating the facts of the case to make sure that all relevant information is uncovered.

You may conduct research to identify the appropriate laws, judicial decisions, legal articles, and other material that will be used to determine whether or not the client has a good case. After analyzing all the information, you may prepare a written report that is used by the attorney to decide how the case should be handled. If the attorney decides to file a lawsuit on behalf of the client, you may prepare legal arguments, draft pleadings to be filed with the court, obtain affidavits, and assist the attorney during the trial. You may also keep files of all documents and correspondence important to the case. A growing number of legal assistants are using computers in their work. Computer software packages are increasingly used to search legal literature stored in the computer and identify legal texts relevant to a specific subject.



### General Education Courses

	Suggested Sequence	Sem Hrs
ENG 111 College Composition I .....	■ □ □ □	3
ENG 112 College Composition II .....	□ ■ □ □	3
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
PSY 101 Applied Psychology OR		
PSY 211 General Psychology .....	■ ■ ■ ■	3/4
SPH 112 Fundamentals of Oral Communication OR		
SPH 114 Interpersonal Communications .....	■ ■ ■ ■	3
--- --- General Elective .....	■ ■ ■ ■	3
<b>SUBTOTAL</b>		<b>20/22</b>

### Business Courses

CIS 133 Introduction to Computer Information Systems OR		
OSE 145 Integrated Office Systems .....	■ □ □ □	4
>* LAS 110 Legal Assistant Roles and Responsibilities .....	■ □ □ □	1
>* LAS 115 Principles of Substantive Law .....	■ □ □ □	3
>* LAS 120 Legal Research & Writing I .....	□ ■ □ □	3
>* LAS 125 Civil Litigation I .....	□ ■ □ □	2
>* LAS 130 Legal Research & Writing II .....	□ ■ □ □	3
>* LAS 135 Civil Litigation II .....	□ ■ □ □	2
>* LAS 150 Real Estate Law .....	□ ■ □ □	2
>* LAS 210 Estate & Trust Administration .....	□ ■ □ □	2
>* LAS 240 Domestic Relations .....	□ ■ □ □	2
>* LAS 245 Personal Injury .....	□ ■ □ □	3
>* LAS 250 Corporate Law .....	□ ■ □ □	2
OSE 151 Business Communications I .....	■ ■ □ □	3
# >----- Business Approved Electives .....	■ ■ ■ ■	5
#*----- LAS Elective .....	■ ■ ■ ■	4/5
<b>SUBTOTAL</b>		<b>41/42</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/64

TOTAL CREDITS REQUIRED FOR CERTIFICATE 30

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

You must earn an Associate of Arts, Associate of Science, or Bachelor's degree from an accredited institution to qualify for the awarding of the Legal Assistant Certificate program and must complete the Certificate Curriculum in order to earn a Certificate in Legal Assistant Studies. You may be enrolled concurrently in an Associate or Bachelor degree program.

### # Approved Electives

	Sem Hrs
ACC 211 Principles of Accounting I .....	4
CIS 132 Spreadsheet Fundamentals .....	2
CIS 260 dBase .....	3
GB 153 Introduction to Business .....	3
GB 251 Business Law I .....	3
GB 252 Business Law II .....	3
LAS 201 Computer Assisted Legal Research .....	1
LAS 220 Environmental Law .....	2
LAS 230 Administrative Law .....	2
LAS 235 Criminal Law and Procedure .....	3
LAS 253 Bankruptcy Law .....	2
LAS 255 Law Office Management .....	2
OSE 155 Editing .....	2
OSE 171 Keyboarding II: Format .....	3
OSE 172 Keyboarding III: Intermediate .....	3
OSE 187 WordPerfect Beginning OR	
OSE 188 WordPerfect Intermediate .....	1/2

### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Proficiency in OSE 170, Keyboarding is required for this program; however, it may be waived by successfully passing a keyboarding test. See counselor's office.
- 2. See page 91 for graduation requirements.
- 3. Delta College reserves the right to modify program requirements.



# MACHINE TOOL OPERATIONS

## OPTIONS:

### INDUSTRIAL SUPERVISION MACHINE TOOL OPERATIONS

#### Associate in Applied Science Degree/Certificate

In addition to the skills you will gain from courses completed in the Machine Tool Operations Certificate program, when you enroll in the Associate degree program you are offered two options; one is greater in depth in machine operator training, the other offers greater breadth through supervisory training.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
>*ENG 111 College Composition I .....	■ ■ □ □	3
ENG 112 College Composition II <b>OR</b>		
ENG 113 Technical Writing .....	□ □ ■ ■	3
>*MTH 103 Applied Geometry and Trigonometry <b>OR</b>		
MTH 113 Applied Trigonometry .....	□ ■ □ □	4
>*MTH 111 Applied Algebra <b>OR</b>		
MTH 119 Intermediate Algebra .....	■ □ □ □	4
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government .....	■ ■ ■ ■	3
SPH 112 Fundamentals of Oral Communication <b>OR</b>		
SPH 114 Interpersonal Communications .....	■ ■ ■ ■	3
SUBTOTAL		22

#### Technical Core Courses

>*CAD 114 AutoCAD Introduction .....	■ □ □ □	2
>*CNC 160 Computer Numerical Control Programming I .....	■ ■ □ □	3
>*DRF 120 Beginning Industrial Blueprint Reading .....	■ □ □ □	2
>*DRF 124 Blue Print Reading for Machine Tool Operators .....	■ □ □ □	2
>*MS 101 Machine Shop I .....	■ □ □ □	4
>*MS 102 Machine Shop II .....	■ □ □ □	4
>*MS 103 Machine Shop III .....	■ □ □ □	4
>*MS 104 Machine Shop IV .....	□ ■ □ □	4
>*MS 105 Machine Shop V .....	□ ■ □ □	4
>*MS 106 Machine Shop VI .....	□ ■ □ □	4
>*MS 107 Machine Shop VII .....	□ □ ■ □	4
>*MS 108 Machine Shop VIII .....	□ □ ■ □	4
>*MS 109 Machine Shop IX .....	□ □ ■ □	4
>*MS 112 Ferrous Heat Treatment .....	■ ■ □ □	2
>*MS 120 Machinist's Handbook .....	■ ■ □ □	2
SUBTOTAL		49

#### Industrial Supervision Option:

* IS 110 Industrial Supervision .....	■ ■ □ □	3
* IS 118 Industrial Safety .....	■ ■ ■ ■	2
* IS 120 Supervisor/Employee Relations .....	□ □ ■ ■	3
* MFG 111 Manufacturing Processes .....	■ ■ ■ ■	3
* MFG 240 Quality and Productivity Management .....	□ □ ■ ■	3
SUBTOTAL		14

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 85

#### Machine Tool Operations Option:

* MS 210 Machine Shop X .....	□ □ □ ■	4
* MS 211 Machine Shop XI .....	□ □ □ ■	4
* MS 212 Machine Shop XII .....	□ □ □ ■	4
SUBTOTAL		12

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 83

TOTAL CREDITS REQUIRED FOR CERTIFICATE 61

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

#### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

1. A waiting list is maintained for the program by the faculty. You may put your name on the list by indicating on your Delta application that you want Machine Tool Operations, Code A1 or B9, or by filling out an application in the Counseling Center office. For more information and program details, see a Counseling staff member.
2. MS 101 through 109 are not necessarily taken in the order listed. The faculty will assign you to your next class based on your progress/machine availability. Usually three five-week machine shop classes are taken per semester.
3. See page 91 for graduation requirements.
4. Delta College reserves the right to modify program requirements.



*"I Decided on Delta!"*



# MANAGEMENT

## OPTIONS:

**GENERAL  
MARKETING  
OFFICE SERVICES**

**RETAIL  
SMALL BUSINESS**

## Associate in Business Studies Degree/ Certificate

Delta College offers the following five specialized management degree options:

**GENERAL MANAGEMENT:** This program is designed to provide a basic foundation in the major functional areas of business management and allows you to structure an individual program that will meet your own needs.

**MARKETING MANAGEMENT:** This program is designed to prepare you for a career in the field of marketing. As a graduate you will have studied the basics of: advertising from the marketing usage point of view; consumer behavior relating to buying; merchandising policies, budgets and planning; sales; retail organizational structure; product promotion and distribution.

**OFFICE SERVICES MANAGEMENT:** This program is designed to provide office operations management skills such as: developing and managing systems for office procedures; report and data compilation; filing and record keeping; information gathering techniques; personnel administration.

**RETAIL MANAGEMENT:** This program is designed to provide skills related to the distribution of merchandise and services within a retail store through buying procedures, inventory control and pricing; marketing processes and functions; advertising strategies.

**SMALL BUSINESS MANAGEMENT:** This program is designed specifically for you if you plan to own and manage your own business, work in a small business, or if you currently own a business and want to become more proficient with your skills.

	Suggested Sequence	Sem Hrs
<b>General Education Courses (Required for all options)</b>		
ECN 221 Principles of Economics I .....	■ ■ ■ ■	4
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government .....	■ ■ ■ ■	3
<b>SUBTOTAL</b>		<b>9</b>

<b>Business Courses (Required for all options)</b>		
CIS 133 Introduction to Computer Information Systems .....	■ ■ ■ ■	4
>GB 110 Business Math .....	■ ■ ■ ■	3
>GB 153 Introduction to Business .....	■ ■ ■ ■	3
* GB 245 Principles of Management .....	■ ■ ■ ■	3
* >GB 251 Business Law I .....	■ ■ ■ ■	3
* >OSE151 Business Communications I .....	■ ■ ■ ■	3
OSE 152 Business Communications II .....	■ ■ ■ ■	3
<b>SUBTOTAL</b>		<b>22</b>

### General Management

ACC 211 Principles of Accounting I .....	■ ■ ■ ■	4
ACC 212 Principles of Accounting II .....	■ ■ ■ ■	4
GB 243 Principles of Marketing .....	■ ■ ■ ■	3
GB 256 Human Resources Management I .....	■ ■ ■ ■	3
GB 265 International Business .....	■ ■ ■ ■	3
GB 274 Computer Aided Decisions .....	■ ■ ■ ■	2
--- --- Electives .....	■ ■ ■ ■	12
<b>SUBTOTAL</b>		<b>31</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>		<b>62/65</b>

### Marketing Management

ACC 111 Introductory Accounting OR		
ACC 211 Principles of Accounting I .....	■ ■ ■ ■	4
GB 143 Principles of Advertising .....	■ ■ ■ ■	3
GB 145 Principles of Sales .....	■ ■ ■ ■	3
GB 158 Public Relations OR		
SOC 211 Principles of Sociology .....	■ ■ ■ ■	3
* GB 243 Principles of Marketing .....	■ ■ ■ ■	3
GB 247 Principles of Retailing OR		
GB 248 Principles of Buying for Resale OR		
GB 265 International Business .....	■ ■ ■ ■	3
* GB 253 Applied Marketing Strategies .....	■ ■ ■ ■	3
GB 274 Computer Aided Decisions .....	■ ■ ■ ■	2
--- --- General Electives .....	■ ■ ■ ■	7
<b>SUBTOTAL</b>		<b>31</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>		<b>62</b>

### Office Services Management

ACC 111 Introductory Accounting OR		
ACC 211 Principles of Accounting I .....	■ ■ ■ ■	4
CIS 132 Spreadsheet Fundamentals .....	■ ■ ■ ■	2
CIS 260 dBase (Database) .....	■ ■ ■ ■	3
* GB 256 Human Resources Management I .....	■ ■ ■ ■	3
OSE 145 Integrated Office Systems .....	■ ■ ■ ■	4
OSE 155 Editing .....	■ ■ ■ ■	2
OSE 158 Records Management .....	■ ■ ■ ■	3
OSE 245 Advanced Software Applications .....	■ ■ ■ ■	2
OSE 268 Professional Office Procedures .....	■ ■ ■ ■	3
--- --- General Electives .....	■ ■ ■ ■	5
<b>SUBTOTAL</b>		<b>31</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>		<b>62</b>

### Retail Management

ACC 111 Introductory Accounting OR		
ACC 211 Principles of Accounting I .....	■ ■ ■ ■	4
CED 120 Co-Op: Retail/Management .....	■ ■ ■ ■	3
* GB 247 Principles of Retailing .....	■ ■ ■ ■	3
FM 151 Display .....	■ ■ ■ ■	3
GB 143 Principles of Advertising .....	■ ■ ■ ■	3
GB 145 Principles of Sales .....	■ ■ ■ ■	3
GB 243 Principles of Marketing .....	■ ■ ■ ■	3
GB 248 Principles of Buying for Resale .....	■ ■ ■ ■	3
GB 256 Human Resources Management I .....	■ ■ ■ ■	3
--- --- General Electives .....	■ ■ ■ ■	9
<b>SUBTOTAL</b>		<b>31</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>		<b>62</b>

### Small Business Management

>ACC 111 Introductory Accounting OR		
>ACC 211 Principles of Accounting I .....	■ ■ ■ ■	4
>CIS 120 Small Computer Systems .....	■ ■ ■ ■	3
* >GB 131 Small Business Management I .....	■ ■ ■ ■	3
* >GB 132 Small Business Management II .....	■ ■ ■ ■	3
>GB 145 Principles of Sales .....	■ ■ ■ ■	3
>GB 243 Principles of Marketing .....	■ ■ ■ ■	3
>GB 252 Business Law II .....	■ ■ ■ ■	3
--- --- General Electives .....	■ ■ ■ ■	9
<b>SUBTOTAL</b>		<b>31</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>		<b>62</b>
<b>TOTAL CREDITS REQUIRED FOR CERTIFICATE PROGRAM</b>		<b>34</b>

> **Certificate Option** - A certificate will be awarded when you successfully complete courses preceded by the ">" sign.

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

1. In only the Office Services Management option, OSE 145 may be substituted for CIS 133 (one of the Business Courses required). If this is done, the number of elective credits required will increase to 9.
2. OSE 151 and OSE 245 are prerequisites for OSE 268.
3. For more information about the Co-Op Program, inquire at room F-40 (Allied Health Building) or phone 686-9479.
4. See page 91 for graduation requirements.
5. Delta College reserves the right to modify program requirements.



## MANAGEMENT/SUBSEQUENT DEGREE

- Option I: Business Management**  
**Option II: 3+1 Leading to Bachelor Degree in Management from Northwood University**

### Associate in Business Studies Degree

**Option I: Business Management:** Students who already have an Associate or Bachelor Degree from a regionally accredited institution must complete 24 credits beyond their last degree. Included in the 24 credits will be at least one computer course, one accounting course and GB 245. Choose from the list below:

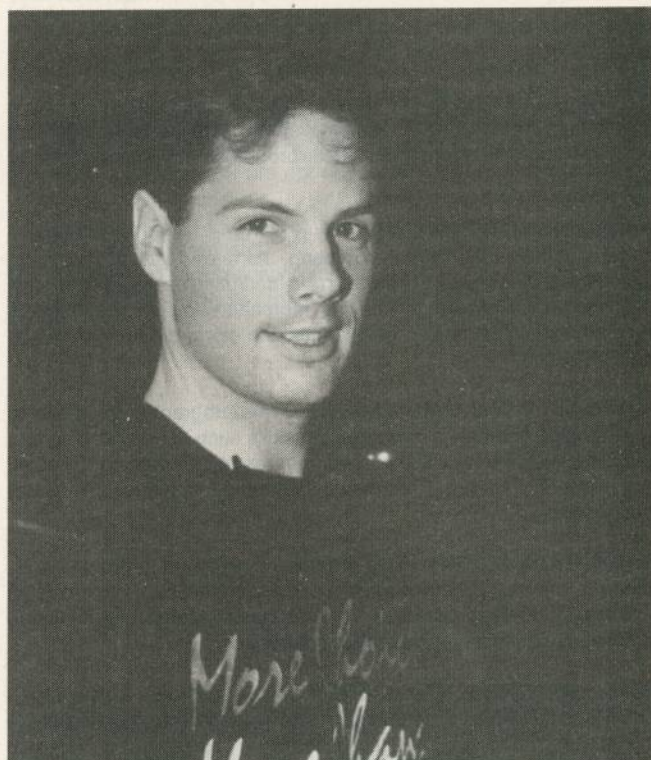
Course	Credits	
ACC 111 Introductory Accounting <b>OR</b>	4	
ACC 211 Principles of Accounting I		
ACC 212 Principles of Accounting II	4	
CIS 133 Introduction to Computer Information Systems <b>OR</b>		
CIS 120 Small Computer Systems <b>OR</b>		
OSE 145 Integrated Office Systems	3/4	
ECN 221 Principles of Economics	4	
GB 153 Introduction to Business	3	
GB 243 Principles of Marketing	3	
GB 245 Principles of Management	3	
GB 251 Business Law I	3	
GB 256 Human Resources Management I	3	
GB 257 Human Resources Management II	3	
GB 274 Computer Aided Decision Making	2	
GB 246 Supervision	3	
GB 265 International Business	3	
GB - - - Business Electives	3	
OSE 151 Business Communications I	3	
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		24

**Option II: 3 + 1 Northwood:** Students who already have an Associate Degree in any field, (other than management programs) from a regionally accredited institution, who wish to obtain a Bachelor Degree in Management through the Delta College-Northwood partnership must complete the following Delta classes and then complete their senior year at Northwood.

Course		Credits
ACC 211	Principles of Accounting I	4
ACC 212	Principles of Accounting II	4
CIS 133	Introduction to Computer Information Systems <b>OR</b>	
OSE 145	Integrated Office Systems	4
ECN 221	Principles of Economics I	4
ECN 222	Principles of Economics II	4
GB 153	Introduction to Business	3
GB 243	Principles of Marketing	3
GB 245	Principles of Management	3
GB 251	Business Law I	3
MTH 208	Elementary Statistics (Math 107 & 119 Prereq.)	3
PHL 203	Business Ethics <b>OR</b>	
PHL 215	Health Care Ethics <b>OR</b>	
PHL 230	Bioethics	3
SUBTOTAL		38
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		24

#### NOTATIONS:

- Official transcript documenting previous degree will have to be on file in the Records Office.
- Completion of the above classes will give you an Associate Degree in Business Management from Delta College. Some of the above credits may have been earned on an earlier degree, but at least 24 must be completed beyond the last degree.
- Contact the Delta College Counseling Office at 686-9330 for more information.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.



*"I Decided on Delta!"*

Curt Harding



## MECHANICAL DESIGN TECHNOLOGY

### Associate in Applied Science Degree

As a mechanical design technician, you will assist engineers in design and development work. This program is designed to equip you with one of the most sought-after technical skills in this area - mechanical drafting and CAD. In addition to placing lines on the drawing board or on the computer screen, however, the designer requires a broad technical knowledge to be able to select a solution to a problem from many alternatives. The largest employers are the electrical equipment, chemicals, machinery, manufacturing, and aerospace industries. In the non-manufacturing area the major employers are communications, engineering and architectural firms.

#### General Education Courses

	Suggested Sequence	Sem Hrs
CIS 114 Computer Fundamentals/IBM	■ □ □ □	1
ENG 111 College Composition I	■ □ □ □	3
ENG 112 College Composition II OR		
ENG 113 Technical Writing	□ ■ □ □	3
MTH 103 Applied Geometry and Trigonometry OR		
MTH 113 Applied Trigonometry	□ ■ □ □	4
MTH 111 Applied Algebra OR		
MTH 119 Intermediate Algebra	■ ■ □ □	4
PE --- Physical Activity Elective	■ ■ ■ ■	1
PE --- Physical Activity Elective	■ ■ ■ ■	1
PHY 101 Applied Physics OR		
PHY 111 General Physics I	■ ■ □ □	4
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government	■ ■ ■ ■	3/4
<b>SUBTOTAL</b>		<b>24/25</b>

#### Technical Courses

CAD 114 AutoCAD Introduction	■ □ □ □	2
CAD 214 AutoCAD Effective Techniques	□ □ ■ ■	2
DRF 104 Basics of Industrial Drafting OR		
DRF 105 Beginning Industrial Drafting	■ □ □ □	4/3
DRF 107 Computer-Aided Industrial Drafting	□ □ □ □	3
DRF 256 Descriptive Geometry	□ □ ■ □	3
DRF 257 Advanced Industrial Drafting	□ □ □ ■	6
EET 235 Electrical Circuits	□ □ ■ ■	5
MFG 111 Manufacturing Process	■ ■ ■ ■	3
MS 113 Machining Processes	■ ■ ■ ■	2
MT 220 Introduction to Fluid Power	□ □ ■ ■	3
MT 221 Materials and Metallurgy	□ □ ■ ■	3
MT 250 Statics & Strength of Materials OR		
MT 244 Mechanisms	□ □ ■ ■	2
MT 251 Mechanics	□ □ ■ ■	3
<b>SUBTOTAL</b>		<b>40/41</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 64/66

#### NOTATIONS:

1. This program is designed to prepare you for a technical-level career upon graduation from Delta College and is not transferable into a Mechanical Engineering Baccalaureate degree.
2. If you want to become a mechanical engineer, you are advised to consult with a counselor about transfer requirements.
3. See page 91 for graduation requirements.
4. Delta College reserves the right to modify program requirements.

## MECHANICAL ENGINEERING TECHNOLOGY

### Associate in Applied Science Degree

The objective of this program is to provide you with a sufficient broad base in the fundamentals of mechanical technology, drafting, CAD, manufacturing and design to be successful as a mechanical engineering technician in a metallurgical or product test laboratory, as a field technician, as an engineering aide in manufacturing or product engineer, in quality control, or in sales and service. Responsibilities as a lab technician may include not only setting up a test apparatus and running tests on an experimental product, but also writing the report and making recommendations. This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. Accreditation by TAC/ABET expands your marketability nationally as engineering technician upon graduation.

#### General Education Courses

	Suggested Sequence	Sem Hrs
CIS 114 Computer Fundamentals/IBM	■ □ □ □	1
ENG 111 College Composition I	■ □ □ □	3
ENG 113 Technical Writing	□ ■ □ □	3
MTH 113 Applied Trigonometry OR		
MTH 121 Plane Trigonometry	■ □ □ □	4/3
MTH 211 Applied Calculus	□ □ ■ ■	5
PE --- Physical Activity Elective	■ ■ ■ ■	1
PE --- Physical Activity Elective	■ ■ ■ ■	1
PHY 101 Applied Physics OR		
PHY 111 General Physics I	□ ■ □ □	4
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government	■ ■ ■ ■	3/4
# --- Approved Science Elective	□ □ ■ ■	4
^ --- Social Science/Humanities Elective	■ ■ ■ ■	5
<b>SUBTOTAL</b>		<b>34/34</b>

#### # Approved Science Electives (select one)

BIO 111 Principles of Biology	
BIO 120 Introduction to Environmental Studies	
CHM 101 General Chemistry I	
CHM 111 General/Inorganic Chemistry I	
GLG 111 Physical Geology	
PHY 112 General Physics II	

#### ^ Suggested Social Science/Humanities Electives:

ECN 221 Principles of Economics I	
PHL 213 Introduction to Ethics	
PHL 203 Business Ethics	
PSY 101 Applied Psychology	
SOC 211 Principles of Sociology	
SOC 265 Third World Development	
SPH 112 Fund. Oral Communication	
SPH 114 Interpersonal Communication	

#### Technical Courses

CAD 114 AutoCAD Introduction	■ □ □ □	2
DRF 104 Basics of Industrial Drafting OR		
DRF 105 Beginning Industrial Drafting	■ □ □ □	4/3
DRF 107 Computer-Aided Industrial Drafting	□ □ □ □	3
EET 235 Electrical Circuits	□ □ ■ ■	5
MFG 111 Manufacturing Process	■ ■ □ □	3
MS 113 Machine Processes	■ ■ ■ ■	2
MT 220 Introduction to Fluid Power	□ □ ■ ■	3
MT 221 Materials and Metallurgy	□ □ ■ ■	3
MT 244 Mechanisms	□ □ ■ ■	2
MT 251 Mechanics	□ □ ■ ■	3
MT 252 Strength of Materials	□ □ ■ ■	3
MT 256 Machine Design	□ □ ■ ■	3
<b>SUBTOTAL</b>		<b>35/36</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 68/71

#### NOTATIONS:

1. This program is designed to prepare you for a technical-level career upon graduation from Delta College and is transferable into a Baccalaureate technology degree program but not an engineering degree program.
2. Students wanting to become mechanical engineers are advised to consult with a counselor about transfer college requirements and follow the Delta College pre-engineering program.
3. See page 91 for graduation requirements.
4. Delta College reserves the right to modify curriculum requirements.



## MEDICAL ASSISTING

### Associate in Applied Science Degree

As a Medical Assistant, you will help physicians examine and treat patients and take care of the clerical work necessary to have a smoothly run office. In helping physicians examine patients, you may check weight, height, temperature, and blood pressure, and make simple laboratory tests. In helping with treatment, you will instruct patients about medication and self-treatment at home, give injections, apply bandages, and take electrocardiograms. Clerical duties are varied but likely to include: processing insurance forms, typing, patient billing and payment records management, scheduling appointments and handling correspondence.

The American Association of Medical Assistants (AAMA) sponsors a certification program and its certifying board awards certificates to medical assistants who pass a comprehensive written examination. Other eligibility requirements to take the certification exam are available from your counselor. Certification is not a license and is not required for AAMA membership; however, physicians usually consider Certified Medical Assistants to be highly qualified assistants.

#### Non Clinical Courses

	Suggested Sequence	Sem Hrs
# *BIO 101 Introduction to Anatomy and Physiology .....	■ □ □ □	4
# *BIO 102 Microbiology and Infection Control .....	■ □ □ □	2
# *HSC 105 Medical Terminology .....	■ □ □ □	2
*HSC 140 Basic Medical Emergencies .....	■ □ □ □	2
*HSC 205 Legal Aspects of Health Care .....	■ □ □ □	2
# *MTH117 Mathematics for Allied Health .....	■ □ □ □	2
# *OSE116 Introduction to the Medical Office .....	■ □ □ □	2
*OSE 151 Business Communications I .....	■ □ □ □	3
*OSE 152 Business Communications II .....	■ □ □ □	3
*OSE 157 Filing .....	■ □ □ □	2
*OSE 172 Keyboarding III: Intermediate .....	■ □ □ □	3
*OSE 254 Medical Insurance I .....	■ □ □ □	3
*OSE 255 Medical Insurance II .....	■ □ □ □	3
*OSE 266 Medical Office Practices .....	■ □ □ □	3
*OSE 276 Medical Machine Transcription .....	■ □ □ □	3
PE --- Physical Activity Elective .....	■ □ □ □	1
PE --- Physical Activity Elective .....	■ □ □ □	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ □ □ □	3/4
SPH 114 Interpersonal Communications .....	■ □ □ □	3
<b>SUBTOTAL</b>		<b>47/48</b>

Prior to attempting to register to begin the clinical sequence you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 28 of this catalog for the required procedures.

**#You may apply for validation at the end of the semester you complete these 12 credits.**

#### Clinical Courses

* MA 205 Medical Office Pharmacology .....	■ □ □ □	1
* MA 206 Pharmacology Applications .....	■ □ □ □	1
* MA 210 Assisting the Physician I .....	■ □ □ □	4
* MA 220 Assisting the Physician II .....	■ □ □ □	4
* MA 230 Medical Assistant Internship .....	■ □ □ □	5
<b>SUBTOTAL</b>		<b>15</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>		<b>62</b>

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Prior to MA 230, you must submit proof of Hepatitis B vaccine immunization or you must submit a signed waiver form.
- 2. Before beginning MA 230 you must have the Delta College Health Appraisal completed, including a negative TB test. You must also possess current Professional (2-person) CPR certification.
- 3. See page 91 for graduation requirements.
- 4. Delta College reserves the right to modify program requirements.

## MEDICAL SECRETARY

### Associate in Business Studies Degree

The efficiency of a medical office and the quality of medical care provided depend in large part upon the office staff members, who supplement and support the role of the physician. As a medical office staff member, you must have strong communication skills, organizational ability, computer knowledge and excellent human relations skills.

While completing this degree program, you will be trained to understand and use medical terminology, to complete health insurance claims, to handle correspondence, to work with medical records, to transcribe medical dictation, to work with appointment schedules and the telephone, and to understand the legal implications of your role as medical secretary.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
BIO 101 Introduction to Anatomy and Physiology .....	■ □ □ □	4
PE --- Physical Activity Elective .....	■ □ □ □	1
PE --- Physical Activity Elective .....	■ □ □ □	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ □ □ □	3/4
PSY 101 Applied Psychology OR .....	■ □ □ □	3
SPH 114 Interpersonal Communications .....		
<b>SUBTOTAL</b>		<b>12</b>

#### Basic Program Requirements

GB 153 Introduction to Business .....	■ □ □ □	3
HSC 105 Medical Terminology .....	■ □ □ □	2
HSC 205 Legal Aspects of Health Care .....	■ □ □ □	2
MA 205 Medical Office Pharmacology .....	■ □ □ □	1
OSE 116 Introduction to the Medical Office .....	■ □ □ □	2
OSE 145 Integrated Office Systems .....	■ □ □ □	4
* OSE 151 Business Communications I .....	■ □ □ □	3
* OSE 152 Business Communications II .....	■ □ □ □	3
OSE 155 Editing .....	■ □ □ □	2
OSE 157 Filing .....	■ □ □ □	2
OSE 172 Keyboarding III: Intermediate .....	■ □ □ □	3
OSE 175 Machine Calculation .....	■ □ □ □	1
* OSE 254 Medical Insurance I .....	■ □ □ □	3
* OSE 255 Medical Insurance II .....	■ □ □ □	3
* OSE 266 Medical Office Practice .....	■ □ □ □	3
* OSE 273 Keyboarding IV: Advanced .....	■ □ □ □	3
* OSE 276 Machine Transcriptions/Medical .....	■ □ □ □	3
--- --- Electives .....	■ □ □ □	7
<b>SUBTOTAL</b>		<b>50</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>		<b>62</b>

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Credit by exam is available for OSE 151, OSE 157, and OSE 175.
- 2. Electives may be substituted upon demonstration of equivalent skills for OSE 172.
- 3. Typewritten assignments are required for OSE 151 Business Communications I.
- 4. A knowledge of general math is required for OSE 175 Machine Calculation.
- 5. OSE 187 WordPerfect Beginning is a prerequisite for OSE 172 and 273 unless you have completed OSE 171.
- 6. See page 91 for graduation requirements.
- 7. Delta College reserves the right to modify program requirements.



# NURSING RN PROGRAM

## Associate in Applied Science Degree

The R.N. program prepares you to function effectively as a member of the health care team. As a graduate nurse, you will be qualified for employment in structured settings; for example, acute care hospitals, extended care facilities, nursing homes, clinics. Upon successfully completing this Program, you are eligible to take the Registered Nurse licensure exam. This Delta College Program is accredited by the National League for Nursing and approved by the Michigan Board of Nursing.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
4.* BIO 131	Anatomy and Physiology I	■ ■ □ □	4
4.* BIO 132	Anatomy and Physiology II	□ ■ ■ □	4
4.* BIO 203	General Microbiology	□ □ ■ ■	4
4. ENG 111	College Composition I	■ □ □ □	3
4. ENG 112	College Composition II	□ ■ ■ □	3
4.* NUR 100	Introduction to Health Care: Nursing	■ ■ ■ □	2
4. PE ---	Physical Activity Elective	■ ■ ■ ■	1
4. PE ---	Physical Activity Elective	■ ■ ■ ■	1
4. PHL 215	Health Care Ethics OR		
4. PHL 230	Bioethics	□ ■ ■ □	3/2
4. POL 103	Introduction to American Government OR		
4. POL 111	American Government and Politics OR		
4. POL 212	State and Local Governments OR		
4. HIS 103	History of American Government	■ ■ ■ ■	3/4
4. PSY 211	General Psychology	■ ■ ■ ■	4
4. SOC 211	Principles of Sociology	■ ■ ■ ■	3
SUBTOTAL			34/36

### Basic Program Requirements

* NUR 101A	Nursing Fundamentals	■	5
* NUR 101B	Care of Aging Adult	■	4
* NUR 150	Basic Nursing Care of the Adult Client	■	9
* NUR 105	Maternity Nursing	■	3
* NUR 106	Pediatric Nursing	■	3
* NUR 209	Psychiatric Nursing	■	3
* NUR 250	Nursing Care and Management Through the Health Continuum	■	9
* PHL 231	Bioethics: Application for Nurses	■	1
SUBTOTAL			37

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 71/73

### NOTATIONS:

\* A "C" (2.0) or better minimum grade required in each asterisked course.

- BIO 131, 132 and 203 must be completed within five years of entry into the clinical nursing sequence. Please see nursing counselor to discuss options.
- Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 29 of this catalog for the required procedures.
- Prior to enrolling in BIO 131, you must either pass the BIO 130 Challenge Exam or successfully complete BIO 130 (Introductory Chemistry and Cell Biology). The content of the Challenge Exam reflects those areas of study usually found in high school biology and chemistry. A copy of the objectives tested is available for you to review in the Counseling Center.
- Prerequisite qualifications are: (a) be admitted to Delta College (b) provide transcripts from high school and all other colleges or training institutions attended (c) completion, with a "C" (2.0) minimum grade in each of the following courses: BIO 131, BIO 132, BIO 203 and NUR 100, (d) completion with a "C" (2.0) grade average in at least 12 credits from the remaining general education courses listed.
- Due to the limited capacity of clinical facilities and the specific requirements of the accreditation agencies, this Program is considered a "limited enrollment" program. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Records and Registration Office.
- First semester nursing courses are offered Fall and Winter Semesters only.

7. You must achieve a minimum "C" (2.0) grade in each nursing course to continue in the program and to graduate from the program. You must comply with all Nursing Program Progression and Retention Policies (copy available from nursing counselor).

8. **Program-Entry Health Requirement:** You must submit a complete physical examination report to the Delta Health Office prior to entrance into the first clinical course. The physical examination must confirm that you are free from communicable disease and capable of performing all the duties necessary for the safe care of patients. A positive TB test will require a recent chest x-ray. As a clinical student, you are required to have a physical exam annually prior to the beginning of the semester. Proof of Hepatitis B vaccine immunization must be submitted with the physical exam form or you must submit a signed waiver form. For persons born after 1957 documentation of immunization for MMR must be provided. Evidence of current (within ten years) Td immunization status required.

9. **C.P.R Training:** You must have a CPR card which remains current throughout the clinical program prior to entering the clinical nursing sequence. Training may be obtained through the Red Cross, Delta College, your local Community Education, or Hospital Education Department. A photocopy of your certificate must be turned in to the Nursing Division Office prior to the start of classes. The CPR certification, known as Professional Rescuers CPR, must include one- and two-person rescuer, infant rescuer and airway obstruction relief.

10. In addition to tuition and textbook costs, you must provide your own uniforms, clinic shoes, and transportation to clinical settings, including possible hospital parking charges.

11. You are expected to possess good basic mathematics skills up to and including Algebra prior to enrollment in NUR 100. If math skills are weak, please consult with the nursing counselor.

12. You will receive a Nursing Student Handbook during the clinical orientation session, which contains additional information, requirements and specific program policies.

13. Clinical nursing courses are demanding and intensive. It is recommended that you prepare for this level of involvement by taking at least one semester of full-time study in pre-clinical courses immediately prior to entry into clinical sequence.

14. Any student with a previous or current felony conviction must inform the Nursing Division Chairperson and/or nursing counselor of said conviction. You should be aware that a felony conviction may constitute grounds for ineligibility to sit for the Nursing Licensure examination. The admittance to and/or continuation in a clinical sequence may be affected by a felony conviction. You should be aware that the current licensure application form now requests the following information:

- History of conviction of a misdemeanor punishable by imprisonment for a maximum of two years.
  - History of conviction of a misdemeanor involving illegal delivery, possession or use of alcohol or a controlled substance (including motor vehicle violations).
  - Treatment for substance abuse in past five years.
  - History of malpractice settlements, awards or judgments.
- Questions may be directed to the Michigan Board of Nursing, P.O. Box 30018, Lansing, MI 48909-7518.

15. Student Re-entry procedures are printed in the handbook given to all clinical students.

16. See page 91 for graduation requirements.

17. Delta College reserves the right to modify program requirements.



# NURSING LPN-RN TRANSITION TRACK

## Associate in Applied Science Degree

Delta College offers a special track Associate Degree program for current Licensed Practical Nurses (LPN) with 1 year of full-time work experience.

The R.N. program prepares you to function effectively as a member of the health care team. As a graduate nurse, you will be qualified for employment in structured settings; for example, acute care hospitals, extended care facilities, nursing homes, clinics. Upon successfully completing this Program, you are eligible to take the Registered Nurse licensure exam. This Delta College Program is accredited by the National League for Nursing and approved by the Michigan Board of Nursing.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
*BIO 130	Introduction Chemistry and Cellular Biology	■ □ □ □	3
1.*BIO 131	Anatomy and Physiology I	■ ■ □ □	4
1.*BIO 132	Anatomy and Physiology II	■ ■ ■ □	4
1.*BIO 203	General Microbiology	□ □ ■ ■	4
ENG 111	College Composition I	■ □ □ □	3
ENG 112	College Composition II	□ □ ■ ■	3
PE ---	Physical Activity Elective	■ ■ ■ ■	1
PE ---	Physical Activity Elective	■ ■ ■ ■	1
*PHL 215	Health Care Ethics OR		
PHL 230	Bioethics	□ ■ ■ ■	3/2
POL 103	Introduction to American Government OR		
POL 111	American Government and Politics OR		
POL 212	State and Local Governments OR		
HIS 103	History of American Government	■ ■ ■ ■	3/4
PSY 211	General Psychology	■ ■ ■ ■	4
SOC 211	Principles of Sociology	■ ■ ■ ■	3
SUBTOTAL			35/37

		Suggested Sequence	Sem Hrs
<b>Basic Program Requirements</b>			
*NUR 161	Transition-Basic Principles of Adult Care	■ □ □ □	2
*NUR 162	Role and Function of the RN	■ □ □ □	2
*NUR 163	Advanced Principles of Adult Care for the LPN	■ □ □ □	5
*NUR 164	Maternal/Child Health for the LPN	□ □ □ □	5
*NUR 209	Psychiatric Nursing	□ □ □ □	5
*NUR 250	Nursing Care and Management Throughout the Health Continuum	□ □ ■ □	9
*PHL 231	Bioethics: Application for Nurses	□ □ ■ □	1
SUBTOTAL			27
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE			62/64

### NOTATIONS:

\* A "C" (2.0) or better minimum grade required in each asterisked course.

- BIO 131, 132 and 203 must be completed within five years of entry into the clinical nursing sequence. Please see nursing counselor to discuss options.
- Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 29 of this catalog for the required procedures.
- Only currently licensed LPN's have the option to take the LPN-RN Transition Track leading to RN licensure. Proof of current LPN licensure must be provided. **A minimum of one-year full-time equivalent work experience required.** If interested in this option, you should make an appointment with the nursing counselor or academic advisor in the Counseling Center.
- Prerequisite qualifications are: (a) be admitted to Delta College (b) provide transcripts from high school and all other colleges or training institutions attended (c) completion, with a "C" (2.0) minimum grade in each of the following courses: BIO 130, BIO 131, BIO 132, BIO 203 (d) completion with a "C" (2.0) grade average in at least 12 credits from the remaining general education courses listed.
- Due to the limited capacity of clinical facilities and the specific requirements of the accreditation agencies, this Program is considered a "limited enrollment" program. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Records and Registration Office.
- First semester Transition Clinical Nursing courses will be offered Spring semester only.
- You must achieve a minimum "C" (2.0) grade in each nursing course to continue in the program and to graduate from the program. You must comply with all Nursing Program Progression and Retention Policies (copy available from nursing counselor).
- Program-Entry Health Requirement:** You must submit a complete physical examination report to the Delta Health Office prior to entrance into the first clinical course. The physical examination must confirm that you are free from communicable disease and capable of performing all the duties necessary for the safe care of patients. A positive TB test will require a recent chest x-ray. As a clinical student, you are required to have a physical exam annually prior to the beginning of the semester. Proof of Hepatitis B vaccine immunization must be submitted with the physical exam form or you must submit a signed waiver form. For persons born after 1957 documentation of immunization for MMR must be provided. Evidence of current (within ten years) Td immunization status required.
- C.P.R Training:** You must have a CPR card which remains current throughout the clinical program prior to entering the clinical nursing sequence. Training may be obtained through the Red Cross, Delta College, your local Community Education, or Hospital Education Department. A photocopy of your certificate must be turned in to the Nursing Division Office prior to the start of classes. The CPR certification, known as Professional Rescuers CPR, must include one- and two-person rescuer, infant rescuer and airway obstruction relief.
- In addition to tuition and textbook costs, you must provide your own uniforms, clinic shoes, and transportation to clinical settings, including possible hospital parking charges.
- You are expected to possess good basic mathematics skills up to and including Algebra prior to enrollment in NUR 100. If math skills are weak, please consult with the nursing counselor.
- You will receive a Nursing Student Handbook during the clinical orientation session, which contains additional information, requirements and specific program policies.
- Clinical nursing courses are demanding and intensive. It is recommended that you prepare for this level of involvement by taking at least one semester of full-time study in pre-clinical courses immediately prior to entry into clinical sequence.
- Any student with a previous or current felony conviction must inform the Nursing Division Chairperson and/or nursing counselor of said conviction. You should be aware that a felony conviction may constitute grounds for ineligibility to sit for the Nursing Licensure examination. The admittance to and/or continuation in a clinical sequence may be affected by a felony conviction. You should be aware that the current licensure application form now requests the following information:
  - History of conviction of a misdemeanor punishable by imprisonment for a maximum of two years.
  - History of conviction of a misdemeanor involving illegal delivery, possession or use of alcohol or a controlled substance (including motor vehicle violations).
  - Treatment for substance abuse in past five years.
  - History of malpractice settlements, awards or judgments.
 Questions may be directed to the Michigan Board of Nursing, P.O. Box 30018, Lansing, MI 48909-7518.
- Student Re-entry procedures are printed in the handbook given to all clinical students.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.



## OFFICE CLERK

### Certificate Program

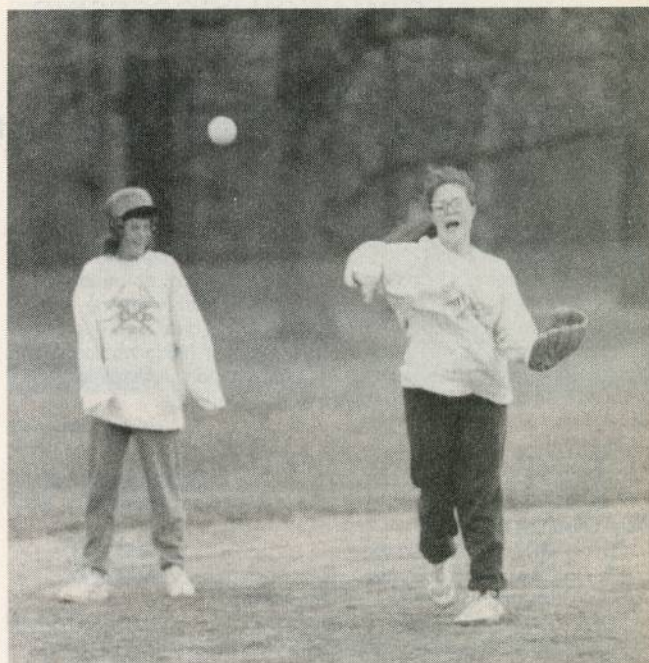
Clerk-typist duties are generally a combination of typing, filing, sorting mail and printed materials, and other general office responsibilities. Upon completing this certificate program, you are prepared for entry-level positions such as Data Typist, General Typist, File Clerk, Mail Clerk, or Office Machine Operator.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
SPH 114 Interpersonal Communications OR		
PSY 101 Applied Psychology .....	■ ■	3
<b>SUBTOTAL</b>		<b>3</b>
<b>Business Courses</b>		
CIS 118 IBM DOS and Windows .....	■ ■	2
GB 110 Business Math .....	■ ■	3
GB 153 Introduction to Business .....	■ ■	3
OSE 145 Integrated Office Systems .....	■ □	4
OSE 150 Business English .....	■ □	2
* OSE 151 Business Communication I .....	■ ■	3
OSE 155 Editing .....	■ ■	2
OSE 157 Filing .....	■ ■	2
OSE 171 Keyboarding II: Format .....	■ □	3
* OSE 172 Keyboarding III: Intermediate .....	□ ■	3
OSE 175 Machine Calculation .....	■ ■	1
<b>SUBTOTAL</b>		<b>28</b>
<b>TOTAL CREDITS REQUIRED FOR CERTIFICATE</b>		<b>31</b>

#### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

1. Credit by examination is available for GB 110, GB 153, OSE 151, OSE 155, OSE 157, and OSE 175. (There is a required testing fee.)
2. If you have equivalent skills, you may waive OSE 171; however, a minimum of 30 semester hours will be required to receive the certificate.
3. Keyboarded assignments required for OSE 151.
4. OSE 187 - WordPerfect Beginning is a prerequisite for OSE 172 unless you have completed OSE 171.
5. If you score less than 70% on the math placement test, you may be required to take MTH 100.
6. A general knowledge of math is required for OSE 175 - Machine Calculation.
7. Students scoring 42 or higher on ASSET take OSE 151 and substitute with an elective.
8. See page 91 for graduation requirements.
9. Delta College reserves the right to modify program requirements.



*"I Decided on Delta!"*

## An Employer's Opinion

*"We use Delta regularly as a source for new employees and have always gotten a favorable response. Delta is one of the first places we go when seeking new job applicants."*

Ms. Mindy Wolpert • Great Lakes Bancorp, Human Services Department • 124 Jefferson • Saginaw, MI 48607



## OPTIONS: ACCOUNTING DESKTOP/MULTIMEDIA PUBLISHING INFORMATION PROCESSING LEGAL

### Associate in Business Studies Degree/Certificate

The efficiency of any organization depends in large part upon its office professionals. Specific job duties differ among organizations and vary among their departments. Today, you must have a strong foundation in developing and transmitting communication through the use of document processing, desktop/multimedia publishing, spreadsheets, data bases, as well as possessing good human relations skills. Opportunities for office employment may be found in banking, education, entertainment, insurance, retailing, the medical field, wholesaling, manufacturing, real estate, travel, and transportation. Academic credit can be earned through a cooperative work experience.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
PE-- Physical Activity Elective .....	■ ■ ■ ■	1
PE-- Physical Activity Elective .....	■ ■ ■ ■	1
POL103 Introduction to American Government <b>OR</b>		
POL111 American Government and Politics <b>OR</b>		
POL212 State and Local Governments <b>OR</b>		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
> PSY101 Applied Psychology <b>OR</b>		
> SPH114 Interpersonal Communications .....	■ ■ ■ ■	3
<b>SUBTOTAL</b>		8/9

<b>Business Courses</b>		
GB 153 Introduction to Business .....	■ ■ ■ ■	3
> OSE 145 Integrated Office Systems .....	■ ■ ■ ■	4
* OSE 151 Business Communication I .....	■ ■ ■ ■	3
* OSE 152 Business Communication II .....	■ ■ ■ ■	3
> OSE 155 Editing .....	■ ■ ■ ■	2
> OSE 157 Filing .....	■ ■ ■ ■	2
* OSE 172 Keyboarding III: Intermediate .....	■ ■ ■ ■	3
> OSE 175 Machine Calculation .....	■ ■ ■ ■	1
* OSE 273 Keyboarding IV: Advanced .....	■ ■ ■ ■	3
<b>SUBTOTAL</b>		24

<b>Accounting</b>		
ACC 111 Introductory Accounting <b>OR</b>		
ACC 211 Principles of Accounting .....	■ ■ ■ ■	4
* ACC 214 Microcomputer Accounting Applications .....	■ ■ ■ ■	4
CIS 118 IBM PC DOS and Windows .....	■ ■ ■ ■	2
CIS 132 Spreadsheet Fundamentals .....	■ ■ ■ ■	2
CIS 260 dBase .....	■ ■ ■ ■	3
* OSE 245 Advanced Software Applications .....	■ ■ ■ ■	2
* OSE 268 Professional Office Procedures .....	■ ■ ■ ■	3
* OSE 274 Machine Transcription .....	■ ■ ■ ■	2
--- Electives .....	■ ■ ■ ■	8
<b>SUBTOTAL</b>		30

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62

<b>Desktop/Multimedia Publishing</b>		
ART 115 Basic Design - 2 D .....	■ ■ ■ ■	3
CIS 118 IBM PC DOS and Windows .....	■ ■ ■ ■	2
CIS 132 Spreadsheet Fundamentals .....	■ ■ ■ ■	2
CIS 260 dBase .....	■ ■ ■ ■	3
OSE 195 Desktop Publishing .....	■ ■ ■ ■	2
* OSE 197 DTP Page Layout and Design .....	■ ■ ■ ■	2
OSE 201 MM I - Presentation Graphics .....	■ ■ ■ ■	2
* OSE 202 MM II - Multimedia .....	■ ■ ■ ■	2
* OSE 245 Advanced Software Applications .....	■ ■ ■ ■	2
* OSE 268 General Office Practices .....	■ ■ ■ ■	3

* OSE 274 Machine Transcription .....	■ ■ ■ ■	2
--- Electives .....	■ ■ ■ ■	5
<b>SUBTOTAL</b>		30
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

<b>Information Processing</b>		
> CIS 118 IBM PC DOS and Windows .....	■ ■ ■ ■	2
> CIS 132 Spreadsheet Fundamentals .....	■ ■ ■ ■	2
CIS 260 dBase .....	■ ■ ■ ■	3
> GB 110 Business Math .....	■ ■ ■ ■	3
* OSE 181 Microsoft Word .....	■ ■ ■ ■	3
* OSE 189 Advanced WordPerfect .....	■ ■ ■ ■	3
* OSE 245 Advanced Software Applications .....	■ ■ ■ ■	2
* OSE 268 General Office Practices .....	■ ■ ■ ■	3
* OSE 274 Machine Transcription .....	■ ■ ■ ■	2
> --- Electives .....	■ ■ ■ ■	5/7
<b>SUBTOTAL</b>		28/30
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

TOTAL CREDITS REQUIRED FOR  
INFORMATION PROCESSING CERTIFICATE 31

<b>Legal</b>		
ACC 111 Introductory Accounting <b>OR</b>		
ACC 211 Principles of Accounting .....	■ ■ ■ ■	4
GB 203 Business Ethics <b>OR</b>		
PHL 203 Business Ethics .....	■ ■ ■ ■	3
GB 251 Business Law I .....	■ ■ ■ ■	3
GB 252 Business Law II .....	■ ■ ■ ■	3
LAS 110 Legal Assistant Roles & Responsibilities .....	■ ■ ■ ■	1
OSE 267 Legal Office Practices .....	■ ■ ■ ■	3
* OSE 275 Machine Transcription/Legal .....	■ ■ ■ ■	2
OSE Business Protocol .....	■ ■ ■ ■	1
OSE Dictation Techniques .....	■ ■ ■ ■	1
--- Electives .....	■ ■ ■ ■	9
<b>SUBTOTAL</b>		30
TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE		62

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. Credit by examination is available for OSE 151, OSE 155, OSE 157, OSE 172, OSE 175, OSE 274, GB 110, and GB 153.
- 2. Electives may be substituted upon demonstration of equivalent skills for OSE 172.
- 3. Keyboarded assignments required for OSE 151 Business Communications I.
- 4. A knowledge of general math is required for OSE 175 Machine Calculation.
- 5. Students not scoring at least 70% on math placement test in GB 110 may be required to take MTH 100.
- 6. OSE 187 WordPerfect Beginning is a prerequisite for OSE 172 (unless you have taken OSE 171); OSE 188 WordPerfect Intermediate is a prerequisite for OSE 273 unless you have completed OSE 172.
- 7. OSE 145 recommended before CIS 132 and CIS 260.
- 8. OSE 151 and OSE 245 are prerequisites for OSE 268.
- 9. Students planning to transfer to Northwood University should select SPH 114, ACC 211, ECN 221, HIS or 4 credit hour lab science for electives.
- 10. Academic credit can be earned through a cooperative work experience. Call 686-9479.
- 11. If you select ACC 211 you should take MTH 107 or have equivalent background or concurrent enrollment.
- 12. See page 91 for graduation requirements.
- 13. Delta College reserves the right to modify program requirements.



# PHYSICAL THERAPIST ASSISTANT

## Associate in Applied Science Degree

Delta's program is for the training of Physical Therapist Assistants only. If you are planning to become a Physical Therapist, you should follow the Pre-Physical Therapy program guide sheet available in Delta's Counseling Center.

As a Physical Therapist Assistant you will work under the direction and supervision of Registered Physical Therapists. You may work in any setting in which Registered Physical Therapists are present. Such settings include acute care hospitals, rehabilitation centers, special education schools, geriatric facilities and private clinics. As a graduate of this program you will be able to carry out patient treatment programs designed by the Registered Physical Therapist which utilize heat, light, water, sound, massage, therapeutic exercises and rehabilitation/habilitation procedures. This Delta College program is accredited by the American Physical Therapy Association.

		Suggested Sequence	Sem Hrs
<b>General Education Courses</b>			
*BIO 131	Anatomy and Physiology I	■ ■ ■ ■	4
*BIO 132	Anatomy and Physiology II	■ ■ ■ ■	4
ENG 111	College Composition I	■ ■ ■ ■	3
ENG 112	College Composition II	■ ■ ■ ■	3
*HSC 105	Medical Terminology	■ ■ ■ ■	2
+PE ---	Physical Activity Elective	■ ■ ■ ■	1
+PE ---	Physical Activity Elective	■ ■ ■ ■	1
POL 103	Introduction to American Government <b>OR</b>		
POL 111	American Government and Politics <b>OR</b>		
POL 212	State and Local Governments <b>OR</b>		
HIS 103	History of American Government	■ ■ ■ ■	3/4
PSY 211	General Psychology	■ ■ ■ ■	4
*SPH 114	Interpersonal Communications	■ ■ ■ ■	3
PHL 215	Health Care Ethics	■ ■ ■ ■	Choose One
PSY 223	Child Psychology	■ ■ ■ ■	3
PSY 231	Psychology of Personality	■ ■ ■ ■	
PSY 241	Abnormal Psychology	■ ■ ■ ■	
PSY 250	Behavior Management	■ ■ ■ ■	
SOC 275	Sociology of Stress	■ ■ ■ ■	
SUBTOTAL			31/32

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 28 of this catalog for the required procedures.

### Clinical Course Sequence

#### Semester 1 (Fall)

*PTA 101	Clinical Anatomy I	■ ■ ■ ■	2
*PTA 105	Modalities I/Clinic I	■ ■ ■ ■	6
*PTA 110	Therapeutic Exercise I	■ ■ ■ ■	3
SUBTOTAL			11

#### Semester 2 (Winter)

*PTA 102	Clinical Neuroanatomy	■ ■ ■ ■	2
*PTA 120	Therapeutic Exercise 2	■ ■ ■ ■	2
*PTA 121	Human Growth and Development	■ ■ ■ ■	2
*PTA 123	Clinical Medicine I	■ ■ ■ ■	3
*PTA 124	P.T.A. Clinic 2	■ ■ ■ ■	2
*PTA 125	Measurement Techniques	■ ■ ■ ■	3
SUBTOTAL			14

#### Semester 3 (Fall)

*PTA 205	Modalities II	■ ■ ■ ■	2
*PTA 210	Therapeutic Exercise 3	■ ■ ■ ■	2
*PTA 213	Clinical Medicine II	■ ■ ■ ■	1
*PTA 214	P.T.A. Clinic 3	■ ■ ■ ■	3
*PTA 215	Rehabilitation Programs	■ ■ ■ ■	1
SUBTOTAL			9



#### Semester 4 (Winter)

*PTA 220	Chest Physical Therapy	■ ■ ■ ■	1
*PTA 221	Clinical Seminar	■ ■ ■ ■	2
*PTA 224	P.T.A. Clinic 4	■ ■ ■ ■	9
SUBTOTAL			12

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 77/78

#### NOTATIONS:

- \* A "C" (2.0) minimum grade is required in each asterisked course.
- 1. A maximum of 30 students will be accepted each Fall semester for Physical Therapist Assistant courses. The procedures for application into the P.T.A. Program are in the guidelines for validation which are in the Counseling Center and on page 28 of this catalog. You will be eligible to attempt to register for clinical courses only after successfully completing the prerequisite qualifications and receiving a "Semester and Year of Validation" from the Records and Registration Office.
- 2. Prerequisite qualifications are: High school graduate or GED equivalent; completion, with a C (2.0) minimum grade in each, HSC 105, SPH 114, BIO 131 & 132; and completion, with a C (2.0) grade average of at least 6 credits from the remaining general education courses listed; provide transcripts from high school and all other colleges attended; be admitted to Delta College.
- 3. Prior to enrolling in BIO 131, you must take BIO 130 or pass the BIO 130 challenge exam. Math skills through Algebra are a must.
- 4. Physical Therapist Assistant courses are offered day hours only and must be taken in the sequence shown.
- 5. You must achieve a minimum C (2.0) grade in each Physical Therapist Assistant course to be eligible to continue in the program.
- 6. In addition to tuition fee and textbook costs, you must purchase lab coats, clinic shoes and provide your transportation to clinical settings (plus possible hospital parking charges).
- 7. After notification received for validation, you must have a complete physical examination including a negative TB test done annually.
- 8. Current CPR certification is required for admission to the clinical sequence. CPR certification must be renewed annually.
- 9. An observation series is also required. Before you finish your prerequisites you must observe two different PTs or PTAs performing their skills in two different offices for a minimum of 8 hours. These observations must be documented on the Observation Form which can be picked up in the Counseling Office. These forms must then be turned into the Allied Health Secretary, F-226, prior to enrollment in the professional course sequence.
- 10. You need to be aware that clinical hospital assignments may be outside the Tri-county area.
- 11. + Highly recommended: PE 158 Adapted Aquatic Aide and PE 160 Health/Lifestyle Risk.
- 12. Student Re-entry procedures are printed in the handbook given to all clinical students.
- 13. See page 91 for graduation requirements.
- 14. Delta College reserves the right to modify program requirements.



## Certificate Program

The P.N. Program is an intense FULL-TIME three semesters that will require college-level reading skills, as well as skills in health care mathematics as taught in MTH 117 and NUR 120.

	Suggested Sequence	Sem Hrs
<b>Pre-Clinical Courses</b>		
*BIO 130 Introduction to Chemistry & Cell Biology .....	■ □ □ □	3
*NUR 100 Introduction to Health Care .....	■ □ □ □	2
<b>SUBTOTAL</b>		<b>5</b>

Prior to attempting to register to begin the clinical sequence, you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 29 of this catalog for the required procedures.

### Clinical Courses

* BIO 131 Anatomy and Physiology I .....	□ ■ □ □	4
* BIO 132 Anatomy and Physiology II .....	□ □ ■ □	4
1. PNE 100 Role/Function Nurse Assistant (optional) .....	□ ■ □ □	(1)
* PNE 101 Fundamentals of Nursing .....	□ □ □ □	7
* PNE 102 PN Care of the Adult I .....	□ □ ■ □	8
* PNE 103 PN Maternal Child Care .....	□ □ □ ■	5
* PNE 104 PN Care of the Adult II .....	□ □ □ ■	8
<b>SUBTOTAL</b>		<b>37/38</b>

TOTAL CREDITS REQUIRED FOR CERTIFICATE 42

### Recommended Preparatory Classes

BIO 203 Microbiology .....	□ ■ □ □	4
ENG 111 College Composition I .....	■ ■ ■ □	3
HSC 105 Medical Terminology .....	■ □ □ □	2
MTH 117 Allied Health Math OR		
NUR 120 Medication Administration .....	■ □ □ □	3

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

- Only students wishing to take State Nurse Aide Certification exam at completion of first semester **must take this course**.
- BIO 130 must be completed within five years of entry into the clinical sequence. For credits older than 5 years, you will have to pass the challenge exam for BIO 130; or successfully retake, with a grade of C or better.
- Due to the limited capacity of clinical facilities and the specific requirements of the accreditation agencies, this Program is considered a "limited enrollment" program. You will be eligible to attempt to register for clinical courses only AFTER SUCCESSFULLY COMPLETING THE PREREQUISITE COURSES AND RECEIVING A "SEMESTER AND YEAR OF VALIDATION" FROM THE RECORDS AND REGISTRATION OFFICE.
- You are expected to possess good basic mathematics skills up to and including algebra prior to enrollment in NUR 100. If math skills are weak please consult with a counselor in the Counseling Center.
- The clinical courses are to be completed in sequence and taken on a fulltime basis. A grade of "C" (2.0) or better is required in each course to progress to the next course and to complete the program.
- The Anatomy and Physiology courses (BIO 131 and 132) may be completed prior to the clinical semester listed.
- C.P.R. Training:** All students entering clinical courses must have a CPR card which must remain current throughout the clinical program. Training may be obtained through the Red Cross, Delta College, your local Community Education, or Hospital Education facility. (A photocopy of your certificate must be turned in at the P.N. Coordinator's Office prior to the start of classes). The CPR certification, known as Professional Rescuers (CPR), must include one-and two-person rescuer, infant rescuer and airway obstruction relief.

8. **Program-Entry Health Requirement:** You must submit a complete physical examination report to the Delta Health Office **prior** to entrance into the first clinical course. The physical examination must confirm that you are free from communicable disease and capable of performing all the duties necessary for the safe care of patients. A positive TB test will require a recent chest X-ray. Clinical students are required to have a physical exam annually prior to the beginning of the semester. Proof of Hepatitis B vaccine immunization must be submitted with the physical exam sheet or you must submit a signed waiver form. For persons born after 1957 documentation of immunization for MMR must be provided. Evidence of current (within 10 years) Td immunization status required.

- In addition to tuition and textbook costs, you must provide your own uniforms, clinic shoes, and transportation to clinical settings, including possible hospital parking charges.
- You are expected to possess good basic mathematics skills up to and including Algebra prior to enrollment in NUR 100. If math skills are weak, please consult with the nursing counselor.
- You will receive a Practical Nursing Student Handbook during the clinical orientation session, which contains additional information, requirements and specific program policies.
- Clinical nursing courses are demanding and intensive. It is recommended that you prepare for this level of involvement by taking at least one semester of full-time study immediately prior to entry into clinical sequence.
- Any student with a previous or current felony conviction must inform the Nursing Division Chairperson and/or nursing counselor of said conviction. You should be aware that a felony conviction may constitute grounds for ineligibility to sit for the Practical Nursing Licensure examination. The admittance to and/or continuation in a clinical sequence may be affected by a felony conviction. You should be aware that the current licensure application form now requests the following information:
  - History of conviction of a misdemeanor punishable by imprisonment for a maximum of two years.
  - History of conviction of a misdemeanor involving illegal delivery, possession or use of alcohol or a controlled substance (including motor vehicle violations).
  - Treatment for substance abuse in past five years.
  - History of malpractice settlements, awards, or judgments.
Questions may be directed to the Department of Commerce, Michigan Board of Nursing, P.O. Box 30018, Lansing, Michigan 48909-7518.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.

## "Counselor's Quote"

James Sheltraw: Hemlock High School

"Delta is an asset to the community. They are diversified and offer a quality education and excellent opportunities."



# RADIOGRAPHY

## Associate in Applied Science Degree

Working under the supervision of a physician, Radiographers (also called Radiologic Technologists) assist in patient care and diagnosis through the use of x-ray equipment to take images of the internal structures of a patient's body. Radiographers position the patient; determine and set exposure factors; expose and process the required number of radiographs; prepare and help administer chemical mixtures called contrast media; assist in fluoroscopic examinations; and use radiation protection devices and techniques. Upon successfully completing this program, you are eligible to take the national certification examination administered by the American Registry of Radiologic Technologists. This program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA) in cooperation with the Joint Review Committee on Education in Radiologic Technology.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
*BIO 102 Microbiology and Infection Control .....	■ □ □ □	2
*BIO 131 Anatomy and Physiology I .....	□ ■ □ □	4
*BIO 132 Anatomy and Physiology II .....	□ □ ■ □	4
# ENG 111 College Composition I .....	■ □ □ □	3
# ENG 112 College Composition II .....	□ □ □ □	3
*HSC 105 Medical Terminology .....	■ ■ ■ □	2
*HSC 140 Basic Medical Emergencies .....	■ ■ ■ □	2
# PE --- Physical Activity Elective .....	■ ■ ■ ■	1
# PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
#PSY 101 Applied Psychology OR		
#PSY 211 General Psychology .....	■ ■ ■ ■	3/4
#SPH 114 Interpersonal Communications .....	■ ■ ■ ■	3
	<b>SUBTOTAL</b>	<b>31/33</b>

Prior to attempting to register to begin the clinical sequence you must complete the "Validation Application for Health Clinical Programs" and be officially validated. See page 28 of this catalog for the required procedures.

### Clinical Course Sequence:

#### First Semester (Fall)

*RAD 100 X-Radiation Physics .....	4
*RAD 102 Introduction to Radiography .....	2
*RAD 105 Fundamentals of Radiography .....	2
*RAD 110 Principles of Radiographic Exposure .....	1
*RAD 115 Clinical Orientation .....	3
	<b>SUBTOTAL</b>
	<b>12</b>

#### Second Semester (Winter)

*RAD 120 Principles of Radiation Biology & Protection .....	2
*RAD 130 Radiographic Procedures I .....	2
*RAD 135 Clinical Education I .....	7
*RAD 140 Clinical Seminar I .....	1
	<b>SUBTOTAL</b>
	<b>12</b>

#### Third Semester (Spring)

*RAD 150 Radiographic Procedures 2 .....	2
*RAD 155 Radiographic Quality Assurance .....	1
*RAD 160 Clinical Education 2 .....	6
*RAD 165 Clinical Seminar 2 .....	1
	<b>SUBTOTAL</b>
	<b>10</b>

#### Fourth Semester (Fall)

*RAD 210 Pathology in Radiography .....	2
*RAD 215 Radiographic Procedures 3 .....	2
*RAD 220 Clinical Education 3 .....	7
*RAD 225 Clinical Seminar 3 .....	1
	<b>SUBTOTAL</b>
	<b>12</b>

#### Fifth Semester (Winter)

*RAD 235 Radiographic Procedures 4 .....	2
*RAD 240 Special Procedures .....	3
*RAD 245 Clinical Education 4 .....	7
*RAD 250 Clinical Seminar 4 .....	1
	<b>SUBTOTAL</b>
	<b>13</b>

#### Sixth Semester (Spring)

*RAD 260 Clinical Education 5 .....	10
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TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 96/98

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

# With a GPA of 2.0 overall.

- Approximately 18 students will be accepted each Fall Semester for Radiography courses. After successfully completing the prerequisite qualifications and submitting a "Validation Application for Health Clinical Programs," you will be eligible to attempt to register per special phone registration listed in the Fall Schedule of Academic Classes. The procedures for application into the clinical portion of the Radiography Program are listed on page 28 of this catalog and are available in the Counseling Office.
- Prerequisite qualifications are: (a) high school graduate or GED equivalent; (b) be admitted to Delta College; (c) provide transcripts from high school and all other colleges attended; (d) completion of each of the following courses with a "C" (2.0) minimum grade; HSC 105, HSC 140, BIO 102, BIO 131 & 132 and completion, with a "C" (2.0) grade average of at least 9 credits from the remaining general education courses listed PLUS SPH 114.
- Current CPR certification (for the Professional Rescuer) must be maintained throughout enrollment in the Radiography Program.
- Prior to Program entry, you must complete observations in two participating hospital Radiology Departments (information and forms available in the Counseling Office).
- You must have a complete physical examination, including a negative TB test.
- Radiography Program courses are offered day hours only and must be taken together in the sequence shown.
- You must achieve a minimum "C" (2.0) grade in each Radiography course to be eligible to continue in and graduate from the Program. You must comply with all Radiography Program Progression and Retention Policies (copy available from the Allied Health counselor or Program faculty).
- In addition to tuition and fees and textbooks costs, you must purchase uniforms and clinic shoes; provide your transportation to clinic settings; and pay for meals, parking fees, and any medical treatment which become necessary.
- Math skills through algebra are highly recommended.
- Student Re-entry procedures are printed in the handbook given to all clinical students.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.



## Associate in Business Studies Degree

This Program provides training in the real estate business and is designed for personnel in real estate positions of sales, broker, manager, realtor. In order to declare this program and to receive the Real Estate Associate Degree, you must successfully complete the GRI courses through the Michigan Association of Realtors.

### General Education Courses

		Suggested Sequence	Sem Hrs
PE	--- Physical Activity Elective .....	■ ■ ■ ■	1
PE	--- Physical Activity Elective .....	■ ■ ■ ■	1
PHL	203 Business Ethics .....	□ ■ ■ ■	3
POL	103 Introduction to American Government OR		
POL	111 American Government and Politics OR		
POL	212 State and Local Governments OR		
HIS	103 History of American Government .....	■ ■ ■ ■	3/4
	<b>SUBTOTAL</b>		<b>8/9</b>

### Business Courses

ACC	211 Principles of Accounting I .....	□ ■ ■ ■	4
ARC	101 Materials and Methods of Construction .....	■ ■ ■ □	3
*CIS	133 Introduction to Computer Information Systems .....	■ ■ ■ □	4
GB	143 Principles of Advertising .....	■ ■ ■ ■	3
GB	145 Sales .....	■ ■ ■ ■	3
GB	153 Introduction to Business .....	■ ■ ■ □	3
*GB	172 Residential Mortgage Lending .....	□ ■ ■ ■	2
*GB	183 Real Estate Law .....	□ ■ ■ ■	3
GB	243 Principles of Marketing .....	□ ■ ■ ■	3
*OSE	151 Business Communications I .....	■ ■ ■ □	3
*OSE	152 Business Communications II .....	□ ■ ■ ■	3
+RE	150 Real Estate Fundamentals .....	■ ■ ■ □	3
+RE	280 Real Estate Principles .....	□ ■ ■ ■	8
#---	--- Approved Electives .....	□ ■ ■ ■	9
	<b>SUBTOTAL</b>		<b>54</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63

### # Approved Electives

ACC	212 Principles of Accounting II .....	4
ECO	221 Principles of Economics .....	4
GB	251 Business Law .....	3
PSY	101 Applied Psychology .....	3
RE	130 REALTRON Computer Operation .....	2
RE	245 Property Management .....	2
RE	270 Real Estate Purchase/Closings .....	3
RE	271 Commercial Properties .....	2
RE	284 Real Estate Valuation .....	3
RE	285 Real Estate Appraiser .....	2
SPH	112 Fundamentals of Oral Communication .....	3
SPH	114 Interpersonal Communications .....	3
SPH	212 Listening .....	3

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

1. # Upon presentation of:

- Copy of the grade sheet from the state exam to the Chairperson of the Business Division. Delta College will grant 3 credits for RE 150 based on prior learning experience.
- Copy of the GRI Certificates, Delta College will grant 8 semester hours of credit in RE 280 for prior learning experience.
- Copy of a certificate of completion for the Real Estate Valuation Specialist License (from the State of Michigan) to the Chairperson of the Business Division, Delta College will award 3 credits for RE 284, based on prior learning experience.
- Copy of a certificate of completion for a State Licensed Real Estate Appraiser (from the State of Michigan) to the Chairperson of the Business Division, Delta College will award 2 credits for RE 285, based on prior learning experience.

2. Delta College may grant additional credits for prior learning experience as electives, upon documentation of successful completion of Michigan Real Estate Specialty Licenses/Certifications in the Real Estate field.

3. See page 91 for graduation requirements.

4. Delta College reserves the right to modify program requirements.

# REFRIGERATION, HEATING, AIR CONDITIONING SERVICE TECHNOLOGY

## Certificate Program

This program will provide you education and skill training for service technicians in the Refrigeration, Heating, and Air Conditioning Service Industry. Technicians on the job are needed to test, troubleshoot, repair, install, and sell the wide range of mechanical and electrical appliances and components in this field. Advanced education at the Associate Degree level is available to you at a neighboring college.

### General Education Courses

		Suggested Sequence	Sem Hrs
MTH	107 Algebra I .....	■ □ □ □	3
ENG	111 College Composition .....	■ ■ ■ ■	3
	<b>SUBTOTAL</b>		<b>6</b>

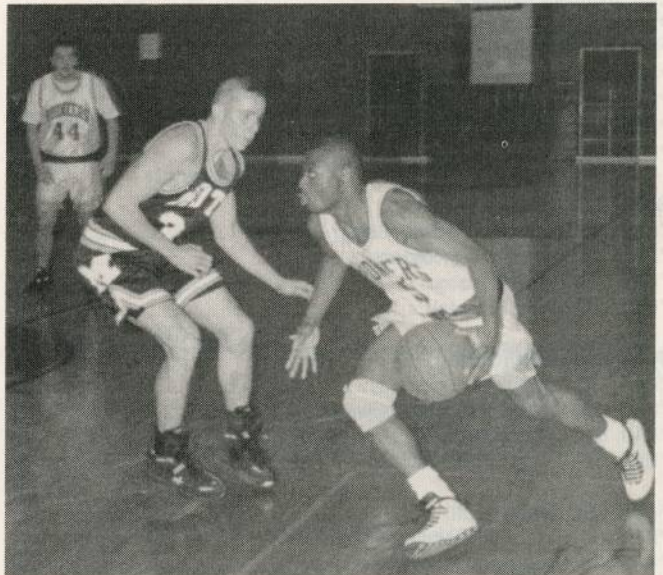
### Technical Courses

RHA	121 Fundamentals of Refrigeration & A/C .....	■ □ □ □	3
RHA	122 Refrigeration & A/C Service I .....	□ ■ □ □	3
RHA	123 Commercial Refrigeration I .....	□ □ □ □	3
RHA	124 Refrigeration & A/C Service II .....	□ □ □ □	3
RHA	125 Commercial Refrigeration II .....	□ □ □ ■	3
RHA	135 Heating System Fundamentals .....	■ ■ ■ □	3
RHA	136 Heating Service Fundamentals .....	□ ■ ■ ■	3
SKET	106 Applied Electricity I .....	■ □ □ □	2
SKMT	171 Sheetmetal I .....	□ ■ ■ ■	2
	<b>SUBTOTAL</b>		<b>25</b>

TOTAL CREDITS REQUIRED FOR CERTIFICATE 31

### NOTATIONS:

- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.





# RESIDENTIAL CONSTRUCTION

## Associate in Applied Science Degree/Certificate

The Certificate Program is designed to prepare you for jobs in rough carpentry and house framing with the skills you have learned in such areas as: job specifications and drawings, building materials, use of woodworking and surveying tools, cost estimations, concrete work, and exterior finishing. Completion of this Program preempts years of apprenticeship in the construction field. You may become self-employed or find employment with a contractor or in a building supply center.

In addition to skills gained from courses completed in the Residential Construction Certificate Program, students completing the Associate degree will have learned construction techniques in interior trim, cabinet making and installation, equipment installation, and interior finishing. The Program also offers the breadth of education necessary for a successful self-employed business or lumberyard management and has the support of the home builders association.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
ENG 111 College Composition I .....	■ □ □ □	3
ENG 113 Technical Writing <b>OR</b>		
ENG 112 College Composition II .....	□ ■ □ □	3
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government <b>OR</b>		
POL 111 American Government and Politics <b>OR</b>		
POL 212 State and Local Governments <b>OR</b>		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
PSY 101 Applied Psychology <b>OR</b>		
PSY 211 General Psychology .....	■ ■ ■ ■	3/4
SUBTOTAL		14/16

### Technical Courses

> RC 101 Construction Print Interpretation .....	■ □ □ □	3
1. RC 102 Building Materials .....	■ □ □ □	3
> RC 104 Construction Laboratory I .....	■ □ □ □	3
1. RC 105 Building Site Surveying .....	□ ■ □ □	3
> RC 106 Concrete and Foundations .....	□ ■ □ □	4
> RC 108 Construction Safety .....	□ ■ □ □	2
1. RC 109 Residential Drafting .....	■ □ □ □	4
>*RC 113 Carpentry Math .....	■ □ □ □	2
>*RC 114 Framing Square .....	■ □ □ □	3
> RC 200 Construction Contracting Rules and Regulations .....	□ □ ■ □	3
> RC 201 Rough Framing and Outside Finishing .....	□ □ ■ □	4
1. RC 202 Building Materials Estimation .....	□ □ ■ □	3
> RC 203 Construction Laboratory II .....	□ □ ■ □	2
RC 204 Inside Finishing and Hardware .....	□ □ ■ ■	3
RC 205 Cabinet Making and Millwork .....	□ □ ■ ■	5
RC 206 Plumbing, Heating and Electrical Equipment .....	□ □ ■ ■	3
1. RC 211 Elements of Structural Design .....	□ ■ □ □	3
SUBTOTAL		53

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 67/69

TOTAL CREDITS REQUIRED FOR CERTIFICATE 42

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">".

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

1. + These courses are co-listed with Architecture Technology courses and can be taken as ARC courses, i.e., RC 109 = ARC 105.
2. RC 113 may be waived if you score on the numerical skills part of ASSET recommends Algebra I (Math 107) or higher.
3. See page 91 for graduation requirements.
4. Delta College reserves the right to modify program requirements.





# RESPIRATORY CARE

## Associate in Applied Science Degree

As a Respiratory Therapist you will be qualified to assume primary clinical responsibility for all respiratory care modalities, including responsibilities involved in the supervision of respiratory technician functions. The therapist is also capable of serving as a resource person to the physician with regard to current practices in respiratory care and to the hospital staff regarding effective and safe methods for administering respiratory care. Respiratory Therapists who have a certificate of completion from an AMA-approved therapist training program, a minimum of 62 college credits, and six months of experience following completion of the program are eligible to apply for registration by the National Board for Respiratory Care (NBRC). The registry examination consists of a written exam and clinical simulation. Applicants must pass both to be awarded the Registered Respiratory Therapist (RRT) credential.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
*BIO 131 Anatomy & Physiology I	■ □ □ □	4
*BIO 132 Anatomy & Physiology II	□ ■ □ □	4
*BIO 203 General Microbiology	□ □ ■ □	4
*ENG 111 College Composition I	■ □ □ □	3
*ENG 112 College Composition II	□ □ □ □	3
*HSC 105 Medical Terminology	■ ■ □ □	2
*PE --- Physical Activity Elective	■ ■ ■ ■	1
*PE --- Physical Activity Elective	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government	■ ■ ■ ■	3/4
*RT 100 Basic Sciences for Respiratory Care	■ ■ ■ ■	2
*PEH 245 Death Education OR		
*PHL 215 Health Care Ethics OR		
*PSY 101 Applied Psychology OR		
*PSY 211 General Psychology OR		
*SOC 211 Principles of Sociology OR		
*SOC 245 Death Education OR		
*SPH 112 Fundamentals of Oral Communication	■ ■ ■ ■	3/4
<b>SUBTOTAL</b>		<b>14/16</b>

Application to the clinical phase of this program may be made after successfully completing ("C" or better) all courses under General Education that are preceded by a plus sign "+"; however, it is **strongly** recommended that the rest of the General Education courses be completed prior to you beginning your clinical sequence.

### Clinical Course Sequence

#### First Semester (Fall)

*RT 111 Oxygen, Aerosol, and Humidity Therapy	2
*RT 112 Medical Gas Production, Use and Regulation	1
*RT 113 Evaluation of the Chest and Breathing: Cough and Sputum; Chest Physical Therapy	1
*RT 114 Sterilization and Asepsis and Basic RT Pharmacology	1
*RT 115 Hyperinflation Therapy and Pressure-Cycled Ventilators	2
*RT 116 Chest X-ray, Blood Gas Interpretation & Bronchoscopy	1
*RT 121 Orientation to RT as a Profession	1
*RT 126 Basic Care Modalities	4
*RT 129 Clinical Seminar I	1
<b>SUBTOTAL</b>	<b>14</b>

#### Second Semester (Winter)

*RT 131 Artificial Airway Care and Manual Ventilation	2
*RT 132 Adult Ventilatory Care	3
*RT 133 Pulmonary Function and Stress Testing I	2
*RT 134 Arterial Blood Gases & Chest Tube Drainage	1
*RT 146 Clinical Education II	7
*RT 149 Clinical Seminar II	1
<b>SUBTOTAL</b>	<b>16</b>

#### Third Semester (Spring)

*RT 235 Cardiovascular Evaluation and Monitoring	2
<b>SUBTOTAL</b>	<b>2</b>

#### Fourth Semester (Fall)

*RT 207 Cardiopulmonary Pathophysiology	2
*RT 211 Advanced Respiratory Physiology	3
*RT 212 Advanced Critical Care Techniques	2
*RT 214 Seminar I	1
*RT 216 Rehabilitation and Home Care I	1
*RT 226 Clinical Education III	7
*RT 229 Clinical Seminar III	1
<b>SUBTOTAL</b>	<b>17</b>

#### Fifth Semester (Winter)

*RT 205 Respiratory Therapy Pharmacology	3
*RT 231 Maternal and Neonatal Respiratory Care	2
*RT 232 Pathophysiology Conference	2
*RT 234 Seminar II	1
*RT 244 Optional Rotation/Special Project	1
*RT 246 Comprehensive Clinical Education	8
<b>SUBTOTAL</b>	<b>17</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 96/98

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

- Prior to enrolling in BIO 131, you must either pass the BIO 130 challenge exam or successfully complete BIO 130 (Introductory Chemistry and Cell Biology). The content of the challenge exam reflects those areas of study usually found in high school biology and chemistry. A copy of the objectives being tested is available to review in the Counseling Center.
- A maximum of 15 students will be accepted each Fall Semester for Respiratory Care courses from qualified students who have been assigned a "semester and year of validation." You will be placed on this list only **after** successfully completing the prerequisite qualifications and submitting a "Validation Application for Health Clinical Program" to the Records and Registration Office. The procedures for application into the Respiratory Care Program are on page 28 of this catalog and are available in the Counseling Office.
- Prerequisite qualifications are: (a) high school graduate or GED equivalent (b) be admitted to Delta College; (c) provide transcripts from high school and all other colleges attended; and (d) completion with a "C" (2.0) minimum grade in each: RT 100, HSC 105, BIO 131 & 132, BIO 203.
- Prior to enrollment in RT 100, you must have good basic algebra skills. You are advised to take MTH 107 if your algebra skills are weak.
- After you receive notification of acceptance for the Fall Semester, you must have a complete physical examination including a negative TB test.
- RT courses are offered day hours only and generally must be taken together in the sequence shown. You must achieve a minimum "C" (2.0) grade in each RT course to be eligible to continue in the Program.
- In addition to tuition and textbook costs, you must purchase a laboratory coat, provide your own transportation to clinical settings (plus possible hospital parking charges), and purchase three Self-Assessment Exams (total cost approximately \$100) during the final semester in the Program.
- Admission to and continuance in the Program is contingent upon your compliance with all policies contained in the Respiratory Care Student Handbook.
- If you have prior respiratory therapy work experience, you may be eligible to waive or receive equivalent credit for some RT courses.
- Current certification in Cardiopulmonary Resuscitation (American Red Cross) or Basic Cardiac Life Support (American Heart Association) is required, BCLS certifications is preferred. Certification can be received in HSC 140, PEH 168, and PEH 169, through the American Red Cross or through the American Heart Association.
- Student Re-entry procedures are printed in the handbook given to all clinical students.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.



## SKILLED TRADES

### OPTIONS:

<b>CARPENTER</b>	<b>PIPEFITTER</b>
<b>ELECTRICIAN</b>	<b>PLUMBING-PIPEFITTER</b>
<b>JOBGING MOLDER</b>	<b>STATIONARY BOILER ENGR.</b>
<b>MACHINE REPAIR</b>	<b>TINSMITH</b>
<b>MILLWRIGHT</b>	<b>TOOL/DIEMAKER</b>
<b>PATTERN MAKER</b>	<b>TOOL HARDNER</b>

### Associate in Applied Science Degree

As an apprentice, you may apply your related training towards an Associate in Applied Science Degree. In addition to the degree requirements listed below, the following requirements must also be met: 1. Successful completion of all courses listed in a specific related training program (33-45 credits). 2. Successful completion of appropriate supportive study elective courses. Supportive electives are courses taken to fit your individual needs. Prior academic course work may be acceptable. Assistance in selecting electives is available from a Delta College counselor familiar with technical career programs. 3. Receipt of a journeyman card or equivalent trade experience.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
ENG 111 College Composition I .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3
ENG 112 College Composition II OR		
ENG 113 Technical Writing OR		
OSE 151 Business Communications I .....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3
PE --- Physical Activity Elective .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	1
PE --- Physical Activity Elective .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	3/4
# --- --- Supportive Electives .....	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	9/18
	<b>SUBTOTAL</b>	<b>20/30</b>

#### Related Training Options:

(See the following for listing of specific courses for each program)

Carpenter (Building Trades) .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	33
Electrician (Industrial) .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	39
Jobbing Molder .....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	38
Machine Repair .....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	40
Millwright .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	38
Pattern Maker .....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	42
Pipefitter (Industrial Maintenance) .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	40
Plumber - Pipefitter .....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	39
Stationary Boiler Engineering .....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	41
Tinsmith .....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	40
Tool/Die Maker .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	39
Tool Hardner .....	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	41

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 62/63

#### # Suggested Supportive Electives

Economics Courses (ECN)  
Electronic Engineering Technology Courses (EET)  
General Management Courses (GB)  
Industrial Supervision Courses (IS)  
Mechanical Technology Courses (MT)  
Psychology Courses (PSY)

#### NOTATIONS:

1. See page 91 for graduation requirements.
2. Delta College reserves the right to modify program requirements.

## Apprenticeship Trade Related Instruction Programs

Delta College offers required Trade Related Instruction Programs for apprentices and up-graders in the industrial trades, building trades, and maintenance trades from the tri-county and surrounding areas. Trade Related Instruction Programs are designed with the cooperation of industry and provide the instruction to strengthen the theoretical knowledge in each trade area. The combination of related instruction and on-the-job experience is essential in order to provide a complete program to train skilled personnel for the trades. Courses are offered both day and evening to accommodate shift assignments. The scheduling and registration for courses is the responsibility of the Skilled Trades Department; therefore, any inquiry about a particular class should be made **directly** to them by phoning (517) 686-9437 or 686-9438.

Since many company apprenticeship programs are registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, it is imperative that the registration for these courses be coordinated by the local plant apprenticeship coordinator and the College Skilled Trades Department. All Trade Related Instruction is subject to change per agreement with the participating employer and Delta College.

The following programs are representative of typical Trade Related Instruction Programs Delta College offers in conjunction with area employers. Employers, however, are not restricted to just these programs and many elect to modify our programs to meet their specific needs. Employers desiring more information on Delta's Trade Related Instruction Program should call the Skilled Trades Program Manager at (517) 686-9438 or 686-9437.

Also see previous column for Associate in Applied Science Degree requirements for Skilled Trades Programs.

#### Trade Related Instruction Programs:

##### Carpenter (Building Trades)

Course No.	Course Title .....	Credit Hrs	Clock Hrs
SKCT111	Construction Print Interpretation .....	3	45
SKCT102	Building Materials .....	3	45
SKCT113	Carpentry Math & Framing Sq. ....	2	30
SKCT114	Framing Square .....	3	45
SKCT105	Building Site Surveying .....	3	45
SKCT106	Concrete and Foundations .....	4	75
SKCT201	Rough & Outside Finishing Framing .....	4	90
SKCT204	Inside Finishing and Hardware .....	3	75
SKCT205	Cabinet Making and Millwork .....	5	105
SKWL103	Fuel Gas Welding and Cutting .....	3	45
<b>Totals</b>		<b>33</b>	<b>600</b>

##### Electrician (Industrial)

Course No.	Course Title .....	Credit Hrs	Clock Hrs
SKMA111	Applied Integrated Electrical Math. I .....	5	75
SKMA112	Applied Integrated Electrical Math. II .....	3	45
SKMA113	Applied Integrated Electrical Math. III .....	3	45
SKEL111	Conventional Controls .....	3	45
SKEL101	Basic Electronics .....	6	90
SKEL102	Industrial Electronics .....	4	60
SKEL131	AC/DC Machinery .....	3	45
SKEL121	Advanced Controls I .....	5	75
SKEL122	Advanced Controls II .....	4	60
SKEL141	Electrical Shop .....	3	45
<b>Totals</b>		<b>39</b>	<b>585</b>



**Jobbing Molder**

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Combined Drawing & Blueprint Rdg	4	60
SKDR111	Drawing II	3	45
SKDR131	Pattern Design	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT111	Metals	3	45
SKMT231	Fundamentals of Foundry Technology	3	45
SKPH101	Applied Physics	4	45
SKTR181	Machine Tools I	2	60
SKTR182	Machine Tools II	3	45
SKTR183	Machinist Handbook	3	45
<b>Totals</b>		<b>38</b>	<b>570</b>

**Machine Repair**

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching & Blueprint Rdg	4	60
SKDR111	Drawing II	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT101	Hydraulics and Pneumatics I	3	45
SKMT102	Hydraulics and Pneumatics II	3	45
SKMT111	Metals	3	45
SKMT161	Industrial Rigging and Safety	2	30
SKTR181	Machine Tools I	2	30
SKPH 101	Applied Physics	4	60
SKTR182	Machine Tools II <b>OR</b>		
SKTR183	Machinery Handbook	3	45
SKCN160	Computer Numerical Controls I	3	45
<b>Totals</b>		<b>40</b>	<b>600</b>

**Millwright**

Course No.	Course Title	Credit Hrs	Clock Hrs
SKCT101	Industrial Millwright Procedures	3	45
SKDR101	Sketching and Blueprint Reading	4	60
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT101	Hydraulics and Pneumatics I	3	45
SKMT151	Power Transmission	3	45
SKMT161	Industrial Rigging & Safety	2	30
SKMT171	Sheetmetal I	2	30
SKMT172	Sheetmetal II <b>OR</b>	3	45
SKMT102	Hydraulics and Pneumatics II	3	45
SKPH101	Applied Physics	4	60
SKWL103	Fuel Gas Welding & Cutting	3	45
SKWL104	Intro. to Shielded Metal Arc Welding <b>OR</b>	3	45
SKWL107	Intro. to GMAW/SMAW	3	45
<b>Totals</b>		<b>40</b>	<b>600</b>

**Pattern Maker**

Course No.	Course Title	Credit Hrs	Clock Hrs
SKCA114	Autocad Introduction	2	30
SKDR101	Sketching & Blueprint Rdg	4	60
SKDR111	Drawing II	3	45
SKDR131	Pattern Design	3	45
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT231	Fundamentals of Foundry Training	3	45
SKTR183	Machinery Handbook	3	45
SKCN160	Computer Numerical Controls I	3	45
SKTR161	Computer Numerical Controls II	3	45
Elective Courses (Select 10 credit hours)			
SKMT 111	Metals	3	45
SKTR 181	Machine Tools I	2	30
SKTR 182	Machine Tools II	3	45
SKPH 101	Applied Physics	4	60
SKDR 121	Descriptive Geometry	3	45
<b>Totals</b>		<b>42</b>	<b>630</b>

**Pipefitter (Industrial Maintenance)**

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching and Blueprint Reading	4	60
SKDR141	Pipe and Tube Isometrics	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKPH101	Applied Physics	4	60
SKPT101	Industrial Piping	4	60
SKWL103	Fuel Gas Welding	3	45
SKPT106	Pipefitters Handbook	3	45
SKPT121	Refrigeration and Air Conditioning	3	45
SKMT101	Hydraulics and Pneumatics I	3	45
SKMT102	Hydraulics and Pneumatics II	3	45
<b>Totals</b>		<b>40</b>	<b>600</b>

**Plumber-Pipefitter**

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching & Blueprint Reading	4	60
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT101	Hydraulics and Pneumatics I	3	45
SKMT171	Sheetmetal	2	30
SKPH101	Applied Physics	4	60
SKPT101	Industrial Piping	4	60
SKPT106	Pipefitters Handbook	3	45
SKPT121	Refrigeration & Air Conditioning	3	45
SKWL103	Fuel Gas Welding & Cutting	3	45
SKWL104	Intro. to Shielded Metal Arc Welding	3	45
<b>Totals</b>		<b>39</b>	<b>585</b>

**Stationary Boiler Engineering**

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching and Blueprint Reading	4	60
SKDR141	Pipe and Tube Isometrics	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT161	Industrial Rigging and Safety	2	30
SKPT106	Pipefitters Handbook	3	45
SKPT111	Stationary Boiler Engineering I	2	30
SKPT112	Stationary Boiler Engineering II	2	30
SKPT113	Stationary Boiler Engineering III	2	30
SKPT114	Stationary Boiler Engineering IV	3	45
SKPT121	Refrigeration & Air Cond.	3	45
SKWL103	Fuel Gas Welding and Cutting	3	45
SKWL104	Intro. to Shielded Metal Arc Welding	3	45
<b>Totals</b>		<b>40</b>	<b>600</b>

**Tinsmith**

Course No.	Course Title	Credit Hrs	Clock Hrs
SKDR101	Sketching & Blueprint Reading	4	60
SKDR121	Descriptive Geometry	3	45
SKMA101	Mathematics I	2	30
SKMA102	Mathematics II	4	60
SKMA103	Mathematics III	4	60
SKMT161	Industrial Rigging & Safety	2	30
SKMT171	Sheetmetal I	2	30
SKMT172	Sheetmetal II	3	45
SKMT173	Sheetmetal III	3	45
SKPH101	Applied Physics	4	60
SKPT126	Air Movement & Duct Design	3	45
SKWL103	Fuel Gas Welding	3	45
SKWL104	Intro. to Shielded Metal Arc Welding <b>OR</b>	3	45
SKWL107	Intro. to GMAW/SMAW	3	45
<b>Totals</b>		<b>40</b>	<b>600</b>

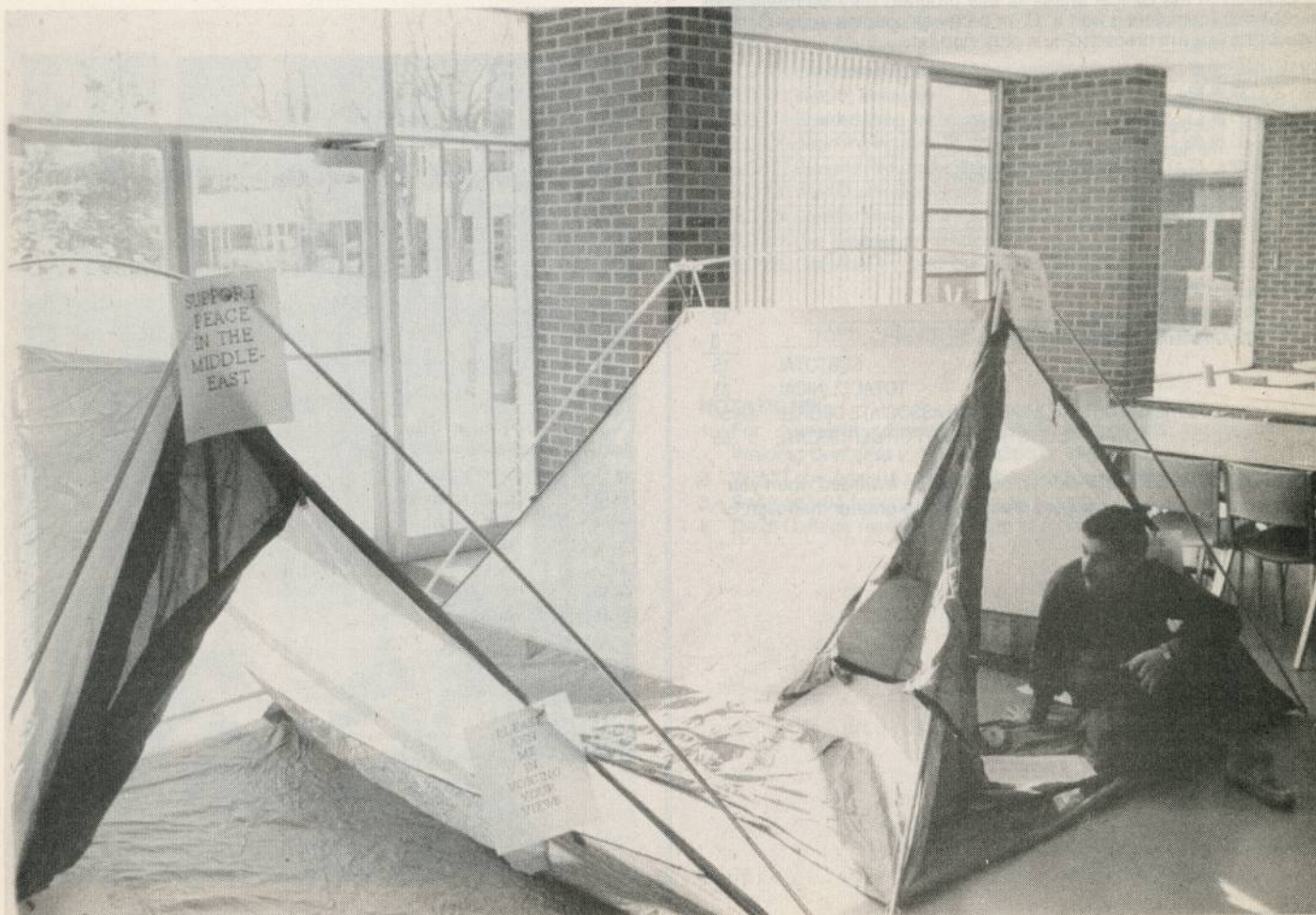


### Tool/Die Maker

Course No.	Course Title .....	Credit Hrs ..	Clock Hrs
SKDR101	Sketching & Blueprint Reading .....	4 .....	60
SKDR111	Drawing II .....	3 .....	45
SKDR130	Tool & Die Design .....	4 .....	60
SKMA101	Mathematics I .....	2 .....	30
SKMA102	Mathematics II .....	4 .....	60
SKMA103	Mathematics III .....	4 .....	60
SKMT101	Hydraulics and Pneumatics I .....	3 .....	45
SKMT111	Metals .....	3 .....	45
SKPH101	Applied Physics .....	4 .....	60
SKTR181	Machine Tool I .....	2 .....	30
SKTR182	Machine Tool II .....	3 .....	45
SKTR183	Machinery Handbook .....	3 .....	45
<b>Totals .....</b>		<b>39 .....</b>	<b>585</b>

### Tool Hardener

Course No.	Course Title .....	Credit Hrs ...	Clock Hrs
SKDR101	Sketching & Blueprint Reading .....	4 .....	60
SKDR111	Drawing II .....	3 .....	45
SKDR130	Tool & Die Design .....	4 .....	60
SKMA101	Mathematics I .....	2 .....	30
SKMA102	Mathematics II .....	4 .....	60
SKMA103	Mathematics III .....	4 .....	60
SKMT111	Metals .....	3 .....	45
SKMT112	Ferrous Heat Treatment .....	2 .....	30
SKPH101	Applied Physics .....	4 .....	60
SKTR181	Machine Tools I .....	2 .....	30
SKTR182	Machine Tools II .....	3 .....	45
SKWL103	Fuel Gas & Cutting .....	3 .....	45
SKWL104	Intro. to Shielded Metal Arc Welding .....	3 .....	45
<b>Totals .....</b>		<b>41 .....</b>	<b>615</b>





# SURGICAL TECHNOLOGY

## Associate in Applied Science Degree/ Certificate

The Surgical Technologist's primary function is to provide a safe, therapeutically-effective environment for the surgical patient by assisting the surgeon and performing related services in the operating room. This program is accredited by CAHEA/CAAHEP and graduates will be eligible to sit for the National Certifying Exam.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
>+*BIO 131 Anatomy and Physiology I .....	■ □ □ □	4
>+*BIO 132 Anatomy and Physiology II .....	■ □ □ □	4
>+*BIO 203 General Microbiology .....	□ □ ■ □	4
ENG 111 College Composition I .....	■ □ □ □	3
ENG 112 College Composition II .....	□ □ □ □	3
>+*HSC 105 Medical Terminology .....	■ ■ □ □	2
>+*HSC 140 Basic Medical Emergencies .....	■ ■ □ □	2
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government <b>OR</b>		
POL 111 American Government and Politics <b>OR</b>		
POL 212 State and Local Governments <b>OR</b>		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
>+*PSY 101 Applied Psychology <b>OR</b>		
>+*PSY 211 General Psychology <b>OR</b>		
>+*SOC 211 Principles of Sociology <b>OR</b>		
>+*SOC 275 Sociology of Stress .....	■ ■ ■ ■	3/4
>+*ST 100 Introduction to Health Care Service .....	□ □ □ □	3
<b>SUBTOTAL</b>		<b>33/35</b>

Application to the clinical phase of this program may be made after successfully completing with a "C" or better all courses under General Education that are preceded by a plus sign "+".

### Clinical Courses

#### First Semester (Fall)

>*ST 107 Pharmacology in the Operating Room .....	2
>*ST 110 The Surgical Patient .....	2
>*ST 120 Fundamentals of Surgical Technology .....	6
>*ST 130 Surgical Anatomy .....	4
>*ST 140 Operative Procedures .....	4
<b>SUBTOTAL</b>	<b>18</b>

#### First Semester (Winter)

>*ST 200 Clinical Externship .....	12
>*ST 201 Operating Room Seminar .....	3
<b>SUBTOTAL</b>	<b>15</b>
<b>TOTAL CLINICAL</b>	<b>33</b>

**TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 66/68**

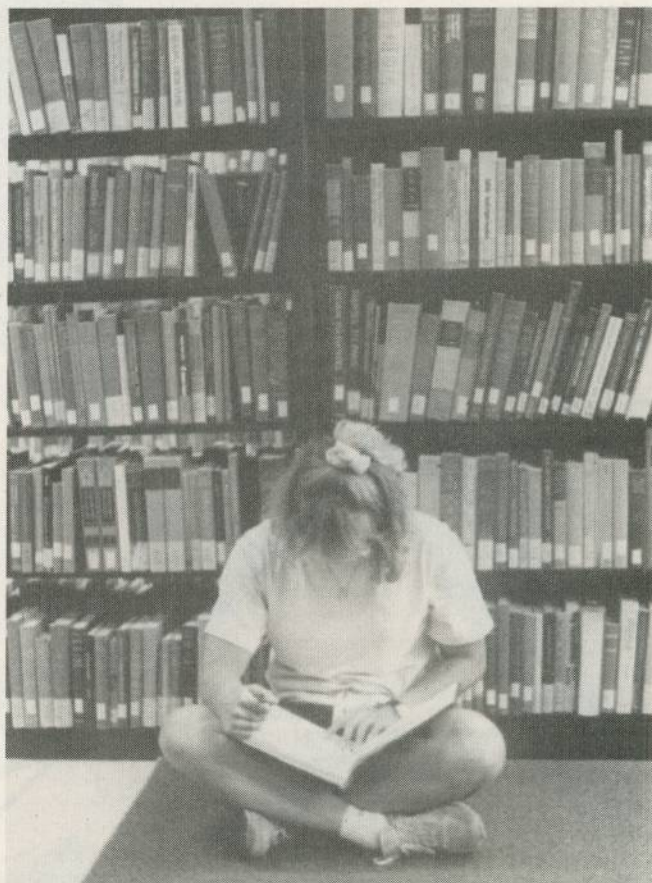
**TOTAL CREDITS REQUIRED FOR CERTIFICATE 55**

> **CERTIFICATE OPTION** - A Certificate will be awarded when you successfully complete courses preceded by a greater than sign ">" (55 credits).

### NOTATIONS:

\* A "C" (2.0) minimum grade is required in each asterisked course.

- As an applicant, you must be a high school graduate or submit a GED equivalency certificate.
- Math skills through MTH 107 Algebra I are a must for you in this program.
- Prior to enrolling in BIO 131 you must either pass the BIO 130 challenge exam or successfully complete BIO 130 (Introductory Chemistry and Cell Biology). The content of the challenge exam reflects those areas of study usually found in high school biology and chemistry. A copy of the objectives being tested is available to you for review in the Counseling Center.
- Application:** The procedures for application into the clinical portion of the Surgical Technology Program are on page 28 of this catalog and are available in the Counseling Center.
- PRIOR to beginning clinical, you MUST have CPR certification, which includes the Two Person Rescuer Technique. CPR certification must be renewed annually.
- Once accepted, you must have a negative TB skin test and/or chest X-ray and a current physical examination which confirms you are free from communicable disease and capable of performing the duties necessary for the safe care of patients. It is highly recommended that you obtain Hepatitis B vaccination.
- You must achieve a minimum of "C" (2.0) grade in each clinical course to be eligible to continue in this program. These courses must be taken in the sequence shown and enrollment in these courses is by permission only.
- When in the clinical phase of the program, you must have transportation available.
- You are responsible for paying the cost of any medical care which might be necessary if you are injured or become ill as a result of clinical practice activities. The College does not provide insurance coverage for such situations.
- Student Re-entry procedures are printed in the handbook given to all clinical students.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.





## WATER/WASTEWATER TREATMENT TECHNOLOGY

### Associate in Applied Science Degree

The vast majority of water and wastewater treatment plant operators work for local governments. Some work for private water supply and sanitary services companies, many of which provide operation and management services to local governments on a contract basis.

Graduation from this program will prepare you to make application to write the Wastewater Class "D" Operator Certification examination and the entry-level waterworks certification examinations.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
BIO 115 Environmental Issues .....	■ ■ ■ ■	2
CHM 111 General and Inorganic Chemistry I .....	■ □ □ □	4
CHM 112 General and Inorganic Chemistry II .....	□ ■ □ □	4
CIS 133 Introduction to Computer Systems OR		
CPS 171 Computer Science I .....	■ ■ □ □	4/3
ENG 111 College Composition I .....	■ □ □ □	3
ENG 113 Technical Writing OR		
ENG 112 College Composition II .....	□ ■ □ □	3
MTH 111 Applied Algebra OR		
MTH 119 Intermediate Algebra .....	■ ■ □ □	4
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ ■ ■ ■	3/4
<b>SUBTOTAL</b>		<b>28/30</b>

#### Technical Courses

WWT110 Water Treatment .....	■ □ □ □	3
WWT112 Waste Water Treatment .....	■ □ □ □	3
WWT211 Water Chemistry I .....	□ ■ □ □	4
WWT212 Water Chemistry II .....	□ □ ■ □	4
WWT220 Microbiology of Water .....	□ □ □ ■	4
WWT 230 Water/Waste Utility Management .....	□ □ ■ ■	3
WWT 240 Applied Hydraulics .....	□ □ ■ ■	3
WWT 244 Water/WasteWater Utility Equipment Maintenance	□ □ ■ ■	3
WWT 246 Water/WasteWater Utility Electrical Maintenance ...	□ □ ■ ■	2
1. WWT 265 Practicum in Water/WasteWater Treatment .....	□ □ □ ■	1
--- --- Elective .....	■ ■ ■ ■	1
<b>SUBTOTAL</b>		<b>34</b>
<b>TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE</b>		<b>62</b>

#### NOTATIONS:

- # Credit hours are subject to change.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.

## WELDING TECHNOLOGY

### Associate in Applied Science Degree

The Associate degree program combines specialized welding training with related technical and general education courses. The Program sets the educational requirements necessary to pursue a Baccalaureate degree in a variety of welding-related careers. You should contact a Counselor or the welding staff for career or transfer information. The Welding Specialist Program meets your needs if you intend to seek immediate employment in the welding field or are presently employed in the welding field and seeking advancement. The program provides specialized training in welding theory and application, as well as an understanding of welding standards and levels of acceptability of American industry. The program also provides a foundation if you are interested in pursuing an Associate or Baccalaureate degree in welding technology.

	Suggested Sequence	Sem Hrs
<b>General Education Courses</b>		
ENG 111 College Composition I .....	■ □ □ □	3
ENG 113 Technical Writing .....	□ ■ □ □	3
MTH 119 Intermediate Algebra .....	■ □ □ □	4
MTH 121 Plane Trigonometry .....	□ ■ □ □	3
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PE --- Physical Activity Elective .....	■ ■ ■ ■	1
PHY 101 Applied Physics .....	■ ■ □ □	4
POL 103 Introduction to American Government OR		
POL 111 American Government and Politics OR		
POL 212 State and Local Governments OR		
HIS 103 History of American Government .....	■ ■ □ □	3/4
SPH 112 Fundamentals of Oral Communication .....	■ ■ ■ ■	3
<b>SUBTOTAL</b>		<b>25/26</b>

#### Technical Courses

MFG 111 Manufacturing Process .....	■ ■ ■ ■	3
WELD 103 Fuel Gas Welding and Cutting .....	■ ■ ■ ■	3
WELD 104 Introduction to Shielded Metal Arc Welding .....	■ ■ □ □	3
WELD 111 Welding Metallurgy .....	■ ■ □ □	3
WELD 114 Shielded Metal Arc Structural and Tank .....	□ ■ □ □	8
WELD 120 Beginning Industrial Blueprint Reading .....	■ ■ □ □	2
WELD 122 Blueprint Reading for Welders and Fabricators .....	□ □ ■ ■	2
WELD 220 Weld Qualification - Plate .....	□ □ □ □	4
WELD 224 Shielded Metal Arc Welding Pipe .....	□ □ □ □	8
WELD 226 Gas Tungsten Arc Welding .....	□ ■ □ □	6
WELD 235 Gas Metal Arc Welding .....	□ ■ □ □	6
<b>SUBTOTAL</b>		<b>48</b>

TOTAL CREDITS REQUIRED FOR ASSOCIATE DEGREE 73/74

#### NOTATIONS:

- For complete program description and details, please call the Welding Center at (517) 496-3368 or 496-3373.
- WELD courses are taught at the Welding Center, Midland, Michigan.
- See page 91 for graduation requirements.
- Delta College reserves the right to modify program requirements.



# Non-Degree Programs and Activities

Program/Activity	Code	Academic Credit	Credit-Free (Non-Academic)	Division/ Department	Phone Number
Admitting Clerk Program	587		X	Community Services	686-9418
Apprenticeship Trade Related Instruction:				Corporate Services	686-9438
Carpenter (Building Trades)	891	X		Corporate Services	686-9438
Electrician (Industrial)	891	X		Corporate Services	686-9438
Jobbing Molder	891	X		Corporate Services	686-9438
Machine Repair	891	X		Corporate Services	686-9438
Millwright	891	X		Corporate Services	686-9438
Pattern Maker	891	X		Corporate Services	686-9438
Pipefitter (Industrial Maintenance)	891	X		Corporate Services	686-9438
Plumber-Pipefitter	891	X		Corporate Services	686-9438
Stationary Boiler Engineering	891	X		Corporate Services	686-9438
Tinsmith	891	X		Corporate Services	686-9438
Tool/Die Maker	891	X		Corporate Services	686-9438
Tool Hardener	891	X		Corporate Services	686-9438
Cake Design	782		X	Community Services	686-9417
Certified Professional Secretary (CPS)			X	Community Services	686-9420
Computer Instruction			X	Community Services	686-9399
Corrections Officer	724	X		Social Science	686-9093
Draperies & Curtains	210		X	Community Services	686-9417
Electrical & Plumbing	877		X	Community Services	686-9420
Emergency Medical Technician	583	X		Allied Health	686-9093
Floral Design	784		X	Community Services	686-9417
Gifted/Talented & Children's Programs			X	Community Services	686-9417
Graphic Arts & Photography	869		X	Community Services	686-9515
Health Unit Coordinator/Ward Clerk	584		X	Community Services	686-9415
Interior Decoration	214		X	Community Services	686-9417
Liberal Arts	075		X	Community Services	686-9414
Life Enhancement Institute			X	Community Services	686-9471
LPN Refresher	565		X	Community Services	686-9415
Management	252		X	Community Services	686-9420
Medical Insurances/Billing I	286		X	Community Services	686-9415
Minority Managers Forum	265		X	Community Services	686-9414
Personal Computers Business Applications			X	Corporate Services	835-6421
Phlebotomist Program	588		X	Community Services	686-9415
Quality & Productivity Improvement			X	Corporate Services	754-8922
Real Estate	567		X	Community Services	686-9420
RN Refresher			X	Community Services	686-9415
Silversmithing & Jewelry-Making	893		X	Community Services	686-9414
Stationary Boiler Operator	369		X	Community Services	686-9420
Teacher Assistant/Paraprofessional	794		X	Community Services	686-9416
Travel Agent Training Program	218		X	Community Services	686-9416
Upholstery				Community Services	686-9417

- Midland/Auburn Callers - Please call 662-4431 and the last four numbers of the above listed numbers
- You will find more information on these programs and activities in either the Schedule of Academic Classes booklet or Community Services Schedule of Classes. Both are published each semester (three times per year).

Delta College offers a variety of courses and programs designed to meet the needs of the diverse communities it serves through credit and credit-free courses. These courses and programs do not lead to a degree or Certificate, but are designed to fill a need identified by an individual or groups of individuals. You will find credit-free classes are enriching and challenging; and also assist an individual with his/her personal or professional development without the pressure of tests, in most instances.

Delta views education as a lifelong process that takes place in a wide variety of environments. These courses and programs are offered throughout the community college district wherever the need exists, adequate facilities are available, and enrollment justifies their being offered. Courses are taught on the Campus, in public schools, in industrial plants, in commercial office buildings, at Delta College Centers and at other suitable locations. The length and frequency of courses differ and are determined by the type and objectives of each course.

The College maintains close liaison with, and is assisted by, program advisory committees; professional, civic and church organizations; governmental agencies; business; the labor industry; and other groups in determining needs and providing education and training to the community.

The credit programs and courses are offered through our 10 academic divisions and Corporate Services. Credit-free programs are primarily offered through Community Services and Corporate Services.

The credit courses are included in the Schedule of Academic Classes booklet or Skilled Trades Schedule each semester. The credit-free programs and courses are listed in the Community Services Course Digest each semester.



## Programs and Activities

### Credit-Free (Non-Academic Credit)

#### Admitting Clerk Program

The Admitting Clerk Program is an exciting new training program designed to meet the needs of hospital Admitting Departments. Persons in these positions will be an integral part of the health care team by: obtaining financial and personal information, completing claims, and scheduling and welcoming incoming patients.

#### Cake Design

The basic techniques of cresting all-occasion cakes to delight customers, family, and friends will be the focus of Cake Design I. More complicated flowers and borders are demonstrated and practiced in the advanced classes.

#### Certified Professional Secretary (CPS)

The CPS designation is earned through an unique certification program for secretaries and other administrative support staff that goes beyond a simple evaluation of levels of knowledge and competency. Attaining the CPS rating is an investment in your career. (Academic credit may be granted upon successful completion of each level.)

#### Computer Applications Professional

A computer program of study from beginning to advanced levels. Choose extensive or limited training on IBM computers.

- \* Free Introductory Seminar
  - \* Computer Literacy
  - \* MS-DOS Concepts
  - \* WordPerfect
  - \* Desktop Publishing
  - \* Introduction to the Macintosh
  - \* Speedreading
  - \* Lotus 1-2-3
  - \* Excel
  - \* Microsoft Windows
  - \* Microsoft Word
  - \* Toolbook
  - \* Microsoft Works
  - \* Business Writing
- \* One-to-One private tutoring in English, business math, writing, spelling

#### Draperies and Curtains

Master the art of making lined or unlined draperies or country curtains. Instruction on measuring windows, fabric selection, hardware, and construction will be given.

#### Electrical & Plumbing

Learn the applied fields of electricity and plumbing at the basic levels.

#### Floral Design

Techniques and procedures of floral design will provide entry-level job skills. Both demonstration and hands-on experience with fresh and silk flowers.

#### Gifted/Talented & Children's Programs (GTCP)

The various programs offered via GTCP strive to meet the individual academic, social, and emotional needs of children through a variety of programs, events, and services. Fantastics is an enrichment program that expands, enhances, and extends learning opportunities for children ages four to 14 years. GRASP is an at-home 10-week correspondence program designed to maintain reading and math skills during the long summer vacation for students in first through 8th grades.

#### Graphic Arts & Photography

Series of related courses in graphic arts.

- \* Alphabets/Calligraphy
- \* Color Theory
- \* Desktop Publishing
- \* Drawing
- \* Sign Painting
- \* Photography

#### Health Unit Coordinator/Ward Clerk

Prepares you for employment in a health care facility. The Health Unit Coordinator (HUC) is a highly respected member of the health care team. You assume a great deal of responsibility in providing non-direct patient care. Other titles by which the HUC may be known are Ward Clerk or Unit Secretary. As an integral part of the health care team, the HUC performs clerical duties, acts as a receptionist for a health unit, and transcribes medication orders.

#### Interior Decoration

Teaches interior design skills and may provide entry-level job skills. You will learn the basics of design; how to choose floor and wall covering, lighting fixtures, and accessories; and how to arrange furniture.

#### Liberal Arts

Liberals Arts is dedicated to the concept of life-long learning, providing courses for adults in studio arts, art history, computers, writing, language, history, culture, new age topics, tours, Kaplan Test preparation, music, air trips, dance, fitness, recreation, dog obedience training, horticulture, and other general interests.

#### Life Enhancement Institute

The Life Enhancement Institute is a program that encompasses a variety of courses and activities designed to enrich and enhance the lifestyles of citizens 50 years of age and older. Courses and activities include sewing, craft classes, senior swim, 55/Alive driving refresher, financial planning, fitness, and more.

#### LPN Refresher

This course provides the opportunity for LPN's licensed in Michigan and interested in returning to the nursing field to update theoretical knowledge, as well as to acquire new skills for direct patient care. A comprehensive pharmacology course is included in the theory portion of the course.

#### Management

Pursue a career in management in the American Management Association Extension Institute/Delta College.

#### Medical Insurances/Billing I

Learn medical insurance billing concepts, diagnostic and procedure coding, basic insurance concepts and terminology used by the health insurance carriers, and completion of claim forms for commercial insurance companies.

#### Minority Managers Forum

The following are the objectives of the Minority Managers Forum:

- Increase participants' awareness of issues, concerns, and practices that impact minority managers.
- Recognize the importance of networking and learn some techniques to network successfully.
- Become cognizant of the process and organizational building blocks for managing diversity.
- Gain knowledge and/or develop skills pertinent in career planning and lateral and upward mobility.
- Provide a forum whereby talents and skills of minority managers can be recognized and utilized.
- Provide professional and personal development opportunities.

Several programs each year are developed to accomplish these objectives.



### Personal Computer Business Applications - IBM and Compatible

Our training for business and industry includes Intro to Windows, Word for Windows, Excel for Windows, Lotus 1-2-3 (intro, intermediate, and macros for a variety of versions), WordPerfect (levels I and II), dBase IV, Paradox, Quattro Pro, Intro to the PC, Intro to DOS, as well as consulting in a variety of areas.

### Phlebotomist Program

The Phlebotomy course is designed to prepare you to perform skin and venipuncture in accordance with procedures established by the National Committee for Clinical Laboratory Standards.

### Quality & Productivity Improvement

Some of our offerings in this area for training and consulting activities include SPC, Problem Solving Tools, Quality Principles, Design of Experiments, Customer Satisfaction, Just-In-Time Techniques, Targets for Excellence Implementation, and Continuous Improvement Programs.

### Real Estate

Prepare for a career in real estate by beginning with Real Estate Fundamentals, a pre-sales license examination course required and approved by the State of Michigan. Other related courses are also available.

### RN Refresher

A comprehensive review for Registered Nurses in preparation for returning to nursing employment. This course provides an opportunity to review and gain nursing knowledge and skill for direct patient care and leadership roles. Class and hospital/clinical experience are included.

### Silversmithing and Jewelry-Making

Learn the basics of jewelry-making and silversmithing and develop skills to start your own business or find employment with an established jeweler. Courses may be taken individually or as a series.

- Silversmithing: techniques including annealing, soldering, filing and sawing, forming a bezel, fusing metals, various surface treatments, and polishing.
- Gemology: learn the characteristics of various gemstones and how to judge quality and value; follow current trends among buyers and collectors.
- Jewelry-Making/Lapidary: gemstone cutting, finishing and mounting; cutting sections from slabs, shaping them on grinding wheels, and polishing and mounting them in standard fittings; and assembling a tool kit.

### Stationary Boiler Operator

Designed to train you to be employed as a stationary boiler fireman to look after boilers and mechanical equipment in public and private buildings and to assist you to obtain a boiler operator's license as well as stationary engineer's license.

### Teacher Assistant/Paraprofessional Program

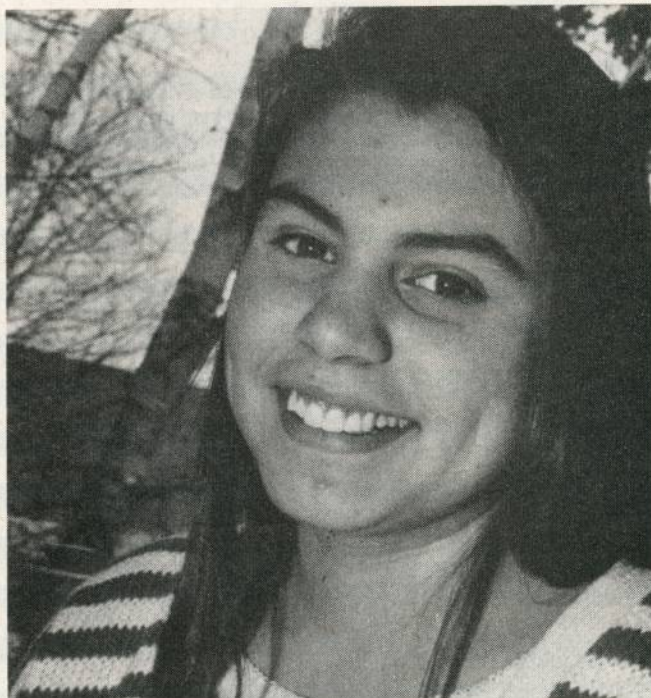
For those who want to work with or who are already working with children in an educational setting as an assistant. Especially helpful to currently-employed assistants who want to upgrade skills.

### Travel Agent Training Program

Includes all phases of the travel business: ticketing, cruises, air travel, tour, basic geography, selling techniques, and computer training.

### Upholstery

Develop upholstery skills for your own employment or for employment in an upholstery business. Learn the upholstery process under the supervision of a skilled upholsterer.



*"I Decided on Delta!"*

Emily Buschlen



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# ACADEMIC POLICIES AND INFORMATION

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1. Acceptance of Credit
2. Grading System
3. Disputed Final Grade Policy
4. Your Academic Status
5. Academic Status for Financial Aid Recipients
6. Graduation Requirements
7. Commencement



# Acceptance of Credit

## From Other Colleges or Training Programs

### From Regionally-Accredited Schools

Course work completed at a college or university accredited by one of the six Regional Accrediting Associations of Colleges and Schools will be considered according to the following guidelines:

#### A. Equivalent Course Work

Freshman and sophomore courses numbered 100 - 299, which were completed with a grade of "C" (2.0) or above on a 4.0 scale and are equivalent to Delta College academic courses will be accepted for credit. Credit will not be granted for courses below the 100-level.

#### B. Non-Equivalent Course Work

"General Elective" credit will be granted for courses completed with a grade of "C" (2.0) or above on a 4.0 scale that are not equivalent to Delta College courses or disciplines. "General Elective" credit applicable to Humanities, Social Science, Science, or Lab Science will be so noted on the student's Delta transcript. (A student must request that a counselor submit the necessary form to the Records and Registration Office to receive this credit).

### From Non-Regionally Accredited Schools

Courses that apply toward a Delta occupational Certificate/Associate degree program will be considered according to the following if they were completed with a grade of "C" (2.0) or above at institutions recognized and approved by the Council on Postsecondary Accreditation (COPA):

1. The Director of Records will forward the transcript for evaluation of the occupational courses to the appropriate Division Chair or Program Director. The following options are available to the Division Chairs or Program Directors:
  - a. Equivalent Delta College credit may be granted upon review of course outlines, and/or course descriptions, and/or appropriate descriptive materials. It is the responsibility of the student to provide any requested materials to enable proper evaluation.
  - b. Equivalent Delta College credit may be granted after successful completion of Delta College courses at the subsequent level.
  - c. Equivalent Delta College credit may be granted upon demonstration of proficiency via examination, interview, or other appropriate evaluation means as determined by the appropriate Division Chair or Program Director.
  - d. Credit may not be granted.
2. No credit will be granted for General Education courses.

### Procedures for Evaluating Credits

1. Only **official transcripts** will be evaluated. Delta College will accept as official transcripts only incoming transcripts that have appropriate signatures and seals and have been mailed directly to the College from an issuing institution. Transcripts in the possession of the student or copies of transcripts or grade reports may be used for academic advising or counseling, but no transfer credits will be posted to the Delta College academic transcript from these documents. It is the responsibility of the Delta College Records and Registration Office to verify the official status of the transcript prior to evaluation.

2. Official transcripts should be mailed to the Delta College Admissions Office from the transfer institution. Admissions will then forward them to the Records and Registration Office. Transcripts received from a Michigan college or university at least one month prior to a registration period will generally be evaluated within one week of receipt in the Records and Registration Office. More time may be necessary to evaluate transcripts from out-of-state institutions.
3. Credits only, not grades, are accepted in transfer. Grades earned at another school in courses accepted by Delta College are not entered on the permanent Delta academic transcript or calculated in the Delta College cumulative grade point average.
4. A maximum of 38 transfer credits are applicable to a Delta College Associate degree and the maximum that may be used toward registration priority.
5. The credit value of each course accepted in transfer will be determined by Delta College; the number of credits will never be greater than the Delta College equivalent course, but the number granted may be fewer than the number of credits received at the transfer institution.
6. Transfer credit granted will be shown on the student's permanent academic transcript.

### Non-Traditional Credit

#### 1. Military credit

- a. All veterans having a certified DD214 form on file in the Veterans Services Office will be granted two physical education (PE) credits and one physical education theory (PEH) credit.
- b. Veterans who have taken educational programs during military service may, under certain conditions, receive elective credit for that work. The Guide to the Evaluation of Educational Experiences in the Armed Services by the American Council of Education is used to determine these elective credits.
- c. Courses completed at accredited military colleges, such as The Community College of the Air Force, may result in the awarding of transfer credit.

#### 2. State-Certified Training

- a. Individuals who have successfully completed training through the Michigan Fire Fighters Training Council may be granted equivalent credit at Delta College upon submission of copies of their state certificates.
- b. Students may be granted credit for the Basic EMT sequence of courses at Delta College if they are already practicing EMT's licensed by the State of Michigan.
- c. Students may be granted credit for other State-certified training if applicable to an **occupational curricula** and approved by the appropriate Division Chair.



### Credit for Prior Learning

You may earn academic credit for prior learning in many areas of study at Delta College. The Credit For Prior Learning Program, administered through the Assessment/Testing Services Office, is designed for students who have gained, through related work experience and/or training, learning that may be equivalent to content taught in actual College courses. If you are interested in any of these programs, please be aware that the following restrictions may apply:

- These options are not available in all areas of study.
- Credits earned through this Program may not be transferrable to other institutions.
- Prior learning credits are not eligible for financial aid.
- You may only apply once for credit in the same course.

Four basic methods are used to assess prior learning. The first three methods are designed for new and currently enrolled students:

1. **Credit By Discipline Exam (CDE):** comprehensive challenge examinations are developed and evaluated by Delta College faculty in selected courses. If you earn a passing grade on a CDE examination, the credits will be recorded on your academic transcript for that course. A per-credit-hour-attempted fee is charged prior to taking a CDE examination. We recommend that you discuss the waiver option with your academic counselor.
2. **Credit By Portfolio:** an individualized process in which you submit a portfolio application, resume, personal manuscript, and supporting documentation of your prior learning. The faculty will then review and evaluate this material for possible credit. A per-credit-hour-attempted fee is charged prior to submitting portfolio materials to the appropriate academic Division. If you successfully complete a portfolio, the earned credits will be recorded on your academic transcript.
3. **Credit By Training:** an individualized process in which you earn academic credit for Delta College Training Programs. If you believe that you qualify for this option, contact the Assessment/Testing Services Office.

The fourth method is designed primarily for transfer students:

4. **College Level Examination Program (CLEP):** national standardized tests in selected academic areas. The application forms, course equivalents, and minimum passing scores for the tests accepted at Delta College are available from the Assessment/Testing Services Office. There is a test fee and a non-refundable administration fee charged per test. You must request that CLEP send your examination scores to the Delta College Records and Registration Office. Upon receipt of successful exam scores, the Records and Registration Office will record the appropriate credit on your academic transcript.

### Articulation Agreements with High Schools and Skill Centers

The Delta College District is part of a statewide effort to implement the Competency Based Education Articulation of occupational programs. It is one of nine demonstration sites in Michigan, supported by a grant from the Michigan Department of Education, Vocational-Technical Education Services, in which secondary and post-secondary teachers, counselors, and administrators jointly develop program agreements.

Articulation is an agreement between public schools and post-secondary institutions which may allow a student to receive credit for instruction received while attending a high school vocational/technical program. Presently, through an Articulation Project, Delta College may accept public school achievement for advanced placement into vocational/technical programs which are similar to programs completed in high school. Any student from Bay-Arenac, Huron Area Skill Center, Midland, Mt. Pleasant, Tuscola Area Career Center, or the Saginaw School District who attends a secondary program which has a signed agreement with Delta College, may receive advanced placement or credit for work completed in a high school or skill center. Eligible students must have graduated after spring 1978 from a public school program which has a signed agreement.

A student moving from a high school or skill center articulated program into a related program area at the College may get a course waiver with no credit or credit for successful completion of a competency test through following these steps:

1. The teacher of the secondary occupational education program shall complete a Student Achievement Recording Process (SARP) and make this a part of the student's permanent record.
2. Upon application for general admission to Delta College, a student shall request the high school to forward a copy of the SARP record to the Director of Admissions, Delta College.
3. The Delta counseling staff will generally review the achievement record of the student and recommend:
  - a. Full course credit be assigned.
  - b. Partial course credit be assigned (procedure not yet established).
  - c. Performance tests be completed.
  - d. Course waiver (no credit assigned).
  - e. Any combination of the above or none of the above.

**Note:** Each student must meet and maintain all of the entrance requirements and academic standards of Delta College and prerequisites for the specific program desired. The Articulation Agreement in **no way guarantees** a student entrance into Delta College or early enrollment into limited enrollment programs.

Programs now articulated are: Accounting, Automotive Services, Computer Information Systems, Drafting, Electronics, General Business, Office Systems Education, Lithography, Machine Tools, Nursing, Residential Construction, and Welding. Further information may be obtained from area high schools/skill centers or from the Articulation Coordinator, 686-9371; from Midland, 662-4431, ext. 9371.

## An Employer's Opinion

*"My most recent hiring of a Delta College student worked out very well. I like to use Delta services because of the quality of students they turn out."*

Mr. Jack Weinstein • Attorney • 760 Somerset • Saginaw, MI



# Grading System

## Grades

The grading system at Delta College is a letter system with associated quality points which are used to compute cumulative grade point averages. You will receive one final grade in each course taken.

Letter Grade	Meaning	Grade Points Per Credit
A	Excellent	4.0
A-	Excellent	3.7
B+	Good	3.3
B	Good	3.0
B-	Good	2.7
C+	Average	2.3
C	Average	2.0
C-	Poor	1.7
D+	Poor	1.3
D	Poor	1.0
E	Fail	0.0
P	Pass (C/2.0 grade or above)	Not included in computing credits and grade points
NC	No Credit (C-/1.7 or below)	
I	Incomplete	
X	Audit	
W	Withdrawal No Evaluation	
WP	Withdrawal Passing	
WE	Withdrawal Failing	
Z	In Progress	

**Note:** The College Community Services Division also uses the above letter grades for their courses; however, points are not awarded or grade point averages maintained for Community Services courses.

## Final Grades

Final grade reports are generally mailed to you within one week of the official ending date of each semester. Final grades are listed on your official academic transcript, which is maintained by the Records and Registration Office. Your final grade is the responsibility of individual faculty members. Instructors may exercise their own prerogatives with respect to your grades as long as these prerogatives do not conflict with other institutional policies.

## I - Incomplete

An instructor may assign an Incomplete grade if you have not fulfilled all course requirements when final grades are assigned. An Incomplete is a temporary grade given only when your work has been of **acceptable quality** near the end of the 15-week semester, but the required amount has not been completed because of reasons satisfactory to the instructor.

**Requirements of a course are to be completed no later than December 1 for Incomplete grades issued in the Winter and Spring/Summer Semesters and April 1 for Incomplete grades issued in the Fall Semester.** In exceptional circumstances, additional time may be granted for completion of course work by notification from the instructor to the Director of Records in writing.

## X - Audit

When you enroll in courses on an Audit basis, a grade of "X" will be recorded on your permanent record, if general requirements of auditing are fulfilled, and no credit will be earned. Some appropriate reasons for Auditing are professional enrichment or personal enjoyment. Tuition and fees are the same as for regular credit courses and a student number is required. Instructor Audit objectives must be fulfilled. Courses taken on an Audit basis are not applicable toward fulfillment of Associate degree or Certificate requirements. You must complete an Audit Request Form in the Records and Registration Office **no later than the end of the Delta College official refund period.** (See page ??). For the deadline to request an Audit for courses that meet one week or less, you should contact the Records and Registration Office. Any questions regarding the course Audit option should be directed to the Records and Registration Office.

Audited courses do not count in determining student eligibility for financial aid. If you are receiving financial aid, you should contact the Office of Financial Aid before changing a course from academic credit status to Audit status. Audit grades will **not** be used in determining academic load for veterans' certification.

## W - Withdrawal

This grade is used when you officially withdraw from a course from the 12th calendar day through mid-point of a course. Additionally, your instructor has the **option** of withdrawing you from a course up to mid-point if:

1. You have been absent from an excessive number of classes **or**
2. You lack the course prerequisites.

## WP/WE - Withdrawal Passing/Failing

If you officially withdraw from a course after mid-point through the end of the 12th week (4/5's of course length), a grade of "WP" (passing course work with a grade of "D" or better at the date of withdrawal) or "WE" (failing course work at the date of withdrawal) will be assigned to you by the instructor.

For information on the drop and withdrawal policies and procedures, see Section II, The Enrollment Process, Registration.

## Z - In Progress

This grade is used for those classes which begin in one semester and continue into another. A final grade with associated quality points will be awarded at the official completion of the class.

## Grade Change Procedure

Once recorded by the Records and Registration Office, grades will be changed only if an official Grade Change Form is completed and signed by the instructor and the appropriate academic Dean. The Grade Change Form must be received **no later than the end of the next semester following grade issuance.** This policy does not apply to grade changes under consideration via the Disputed Grade Policy.



## P/NC - Pass/No Credit Option

The Pass/No Credit grade option is available for several courses at Delta College. If you are interested in this grading option in place of the usual "A" through "E" grading system, you should declare this choice at registration or **no later than** the end of the 12th week of the semester (6th week of a session) by completing a form at the Records and Registration Office. Courses approved for the P/NC grade option are listed in each semester's Schedule of Academic Classes booklet.

### Guidelines and Procedures for P/NC Grade Option:

1. Grades on the P/NC system are not included in computing the semester or cumulative point average.
2. Grade of "P" (Pass): Credit is granted and represents performance at or above the "C"/2.0 level.  
Grade of "NC" (No Credit): No credit is granted and represents performance at or below the "C"/1.7 level.
3. You may not apply more than a total of 12 credits of P/NC course work toward Delta graduation requirements.
4. Enrollment on a P/NC basis is recorded with the Records and Registration Office.  
No indication of your P/NC status will be communicated to a faculty member by any office of the College.
5. A letter grade will be on file in the Records and Registration Office, but only "P" or "NC" will appear on your transcript.
6. If you desire to have any grades converted from P/NC to letter grades, you may do so by applying to the Records and Registration Office **no later than the end of the following semester after the P/NC grade was issued.**
7. Course prerequisites and other criteria for enrolling in any course shall be determined by the Department or Division offering the course and apply equally to both the traditional and the P/NC grading systems.
8. If you are planning to transfer, you should first check with a Delta counselor regarding the acceptance of the P/NC grade option for specific courses by the transfer institution.

### Grade Point Average (G.P.A.)

A student's Grade Point Average is determined by dividing the number of credits attempted into the quality points.  
For example:

	Attempted	Grade	Quality Points
ENG 111	3	B	3x3=9
MTH 107	3	B	3x3=9
BIO 111	4	C	4x2=8
SOC 211	3	A	3x4=12
	<u>13</u>		<u>38</u>

$$\text{G.P.A.} = 38 \text{ divided by } 13 = 2.92$$

**Credits Attempted** - Credits for which the student enrolled and for which grades of A through E were given. Credits for courses in which grades of P, W, WP, WE, I, X, and Z are given are not included here.

**Credits Earned** - Includes all academic credits taken at Delta for which final grades of A through D were recorded.

**Credits transferred** from other institutions or earned by examination are not included in cumulative averages.

**Non-Credit Courses** - Non-credit courses are not included in cumulative averages.

### Grade Points

The number of grade points earned in a course is the number of credits multiplied by the number of grade points corresponding to the letter grade received. For example, a grade of B+ in a four-credit course equals 13.2 grade points ( $3.3 \times 4 = 13.2$ ).

### Repeated Courses

The highest grade received by you for any given course shall be the grade used in computing the cumulative grade point average and the number of credits shall only be counted once in the total number of credits attempted. All grades received by you in a given course shall, however, **remain on your academic transcript** but will be designated by the Records and Registration Office as having been repeated, so it is clear that only the highest grades earned are being counted in cumulative totals.



## Semester Honors

Each semester a President's List is issued of all students who receive a grade point average of 4.0 for that semester; a Vice President's List for all students who receive 3.7 through 3.99 grade point averages; and a Dean's List of students who receive 3.5 through 3.69 grade point averages. To be eligible, you must complete at least 12 credit hours in a Fall, Winter or Spring/Summer Semester. Courses taken on the Pass/No Credit option do not apply.

## Academic Transcripts

Your transcript is the College's official academic record of your work. Your record is updated at the close of each semester. Your academic record includes all academic courses attempted and completed (course titles, credit hours, final grades and honor points), semesters enrolled, transfer credit accepted, courses waived, credit awarded by examination or advanced placement, certificates/degrees awarded, honors, and academic probation/dismissal status. Grades of all Community Services course work are also maintained by the Records and Registration Office. There is a \$5 charge for each transcript copy you request (\$10 for same-day service). Copies will be sent upon your written request to anyone designated by you. Ordinarily transcripts are mailed within one week. Transcript copies will not be furnished if you have delinquent accounts at the College.

## Change of Student Information

A change in your name, address, or program needs to be reported immediately to the Records and Registration Office or the Admissions Office. Communications and Grade Reports will be sent to the latest address on file. Legal name changes, other than marriage, or a Social Security number change require proper documentation.

## Classification of Students

The classifications below apply only to academic students pursuing Certificate or Associate degree programs. Community Services credit hours are not included.

<b>Freshman</b>	29 or less credits earned
<b>Sophomore</b>	30 or more credits earned
<b>Full-Time</b>	Enrolled in 12 or more credits during a semester
<b>Part-Time</b>	Enrolled in 11 or less credits during a semester

## Attendance Policy

It will be necessary for certain groups of students (e.g., veterans, financial aid recipients) to adhere to attendance requirements imposed by the policies of external regulatory agencies beyond the following stipulated by Delta College:

1. Attendance is expected at all courses for your maximum achievement.
2. It is your responsibility to make arrangements for missed course work.
3. The College recognizes that on occasion special College-connected events will conflict with scheduled course/laboratory times. Before those special occasions, you will need to work with the instructor to make alternate arrangements.
4. Individual instructors determine attendance rules and will explain those rules at the initial course meeting and/or in the course syllabus.

## Plagiarism and Honesty in Academic Work

The principles of truth and honesty are recognized as fundamental to a community of scholars. The College expects that both faculty and students will honor these principles and in so doing will protect the validity of College grades. This means that all academic work will be done by the student to whom it is assigned without unauthorized aid or falsification of any kind. Faculty, for their part, will exercise care in the planning and supervision of academic work so that honest effort will be positively encouraged. Faculty will point out to students acceptable forms of incorporating the thoughts of others into their work.

It is expected that:

1. No student will knowingly, without proper authorization, procure, provide, or accept any materials which contain questions or answers to any examination to be given at a subsequent time. The unauthorized possession of such materials will be considered prima facie evidence of a violation of this provision.
2. No student will, without proper authorization, complete, in part or in total, any examination or assignment for another person or allow such examination or assignment to be completed, in part or in total, by another person.
3. No student will knowingly plagiarize or copy the work of another person and submit it as his or her own.
4. No student will knowingly misrepresent performance or falsify documentation related to the performance of any activity required to complete course/program objectives.

If a question of academic honesty should arise, the first efforts toward the solution of the problem will be the responsibility of the faculty involved. The student will be notified of the allegation as soon as it becomes known to the faculty member and given a reasonable opportunity to respond to the faculty member before judgment is reached. Any penalty assessed will be at the discretion of the faculty member, who will take care to match the severity of the penalty with the seriousness of the situation. In any instance in which a failing grade in a course is given based on a charge of academic dishonesty, the faculty will notify the Division Chair and the student in writing of the circumstances and the evidence on which the action was based.

The student may appeal, through the Disputed Final Grades policy, any grade affected by a charge of academic dishonesty.





# Disputed Final Grade Policy

If you do not agree with the final grade you receive in a course, we have a process available to you called Grade Appeal. Since a final grade assignment is made on an individual basis, this procedure can be invoked only by individuals questioning the appraisal of their own academic progress and cannot be invoked by one individual on behalf of a group of individuals.

Every effort will be made to resolve conflicts through informal discussion with the involved parties. You are encouraged to contact the Grade Ombudsman for a clear understanding of the process. All parties involved are encouraged to keep the time intervals between steps as short as possible. The time limits identified are considered maximum unless altered by the Grade Ombudsman, who has the responsibility to see that deadlines are met and the right to extend them under extraordinary circumstances. The Grade Ombudsman is a non-faculty member of the Senate Assembly who is appointed by the President of the College in consultation with the Faculty Executive Committee. Currently, that person is Dr. Burt Fettig, Dean of Students, K-132, phone 686-9220. **The following outlines the basics of the policy. A complete copy is available from the Grade Ombudsman.**

## Informal Process

A student who wishes to discuss concerns regarding a grade will contact the faculty member and/or the Division Chair within 25 calendar days following the date the grade is due in the Records and Registration Office at the end of the semester. The faculty member and the student will attempt to resolve the differences. The Division Chair may be asked to assist with the conflict resolution.

## Formal Process

1. To appeal formally a final grade for a course, the student must contact the Grade Ombudsman within five calendar days after the conference with the faculty member and/or Division Chair.
2. The student will write, within five calendar days of meeting with the Grade Ombudsman, a formal statement that explains the circumstances of the disputed grade. The statement will be given to the faculty member.
3. The faculty member will write a statement of response and submit it to the Division Chair.
4. The faculty member's response together with the student's statement are to be submitted to the Chair of the Division within five calendar days of receiving the student's statement. The grade Ombudsman will supply the student with a copy of the faculty member's statement.
5. The Chair will meet with the student and the faculty member within five calendar days of receiving the student's and faculty member's statements to discuss the grade appeal.
6. The Chair will take one of the following actions within two calendar days of the meeting with the student and the faculty member:
  1. Dismiss the appeal and the grade remains.
  2. Recommend a change of grade, or a change in the grade under specific conditions which are defined by the Chair. The recommendation of the Chair may be appealed to the Grade Appeal Board by either the faculty member or the student within three calendar days of receiving the Chair's recommendation.
7. The Grade Appeal Board is composed of seven members: four faculty members, (three appointed by the Faculty Executive Committee and one appointed by the Chair from the Division which offers the course in which the grade is being appealed); the appropriate academic Dean; one Student Services representative appointed by the Vice President of Student Services; and one student from the Student Senate Committee.
8. The Grade Appeal Board will meet within 10 calendar days of receiving the appeal at a time when both parties are available to respond to the Board's questions. Under special circumstances, alternates may be appointed to the Grade Appeal Board by the person originally responsible for the appointment of that position.
9. By majority vote, the Grade Appeal Board will make one of the following decisions within two calendar days of the meeting:
  1. The appeal is dismissed and the grade remains.
  2. The grade dispute is resolved by changing the grade, or changing the grade under specific conditions. All members of the Board will determine if the grade should be changed and the faculty members on the Board will decide the specific grade to be awarded.
10. Decisions rendered by the Grade Appeal Board will be final.



# Table for Determining Academic Status

Following is the table for determining your academic status at Delta College. To use the table: 1) locate on your grade report or academic transcript your cumulative grade point average and the total number of credits attempted; 2) find the corresponding credits attempted in the left-hand column of the table; and 3) read across the page to your right until you locate the column which includes your current cumulative grade point average. This column heading indicates whether you are in the Satisfactory Progress, the Academic Probation, or the Academic Dismissal range.

Academic Status Scale			
Delta Credits Attempted	Satisfactory Progress	Academic Probation Status	Academic Dismissal Status
12	1.34 and above	.67-1.33	.66 or less
13	1.52 and above	.76-1.51	.75 or less
14	1.53 and above	.86-1.52	.85 or less
15	1.55 and above	.95-1.54	.94 or less
16	1.57 and above	1.03-1.56	1.02 or less
17	1.59 and above	1.08-1.58	1.07 or less
18	1.61 and above	1.12-1.60	1.11 or less
19	1.63 and above	1.17-1.62	1.16 or less
20	1.64 and above	1.21-1.63	1.20 or less
21	1.65 and above	1.25-1.64	1.24 or less
22	1.66 and above	1.28-1.65	1.27 or less
23	1.67 and above	1.30-1.66	1.29 or less
24	1.68 and above	1.34-1.67	1.33 or less
25	1.69 and above	1.37-1.68	1.36 or less
26	1.70 and above	1.40-1.69	1.39 or less
27	1.71 and above	1.44-1.70	1.43 or less
28	1.72 and above	1.47-1.71	1.46 or less
29	1.73 and above	1.50-1.72	1.49 or less
30	1.74 and above	1.54-1.73	1.53 or less
31	1.75 and above	1.56-1.74	1.55 or less
32	1.76 and above	1.58-1.75	1.57 or less
33	1.78 and above	1.61-1.77	1.60 or less
34	1.79 and above	1.63-1.78	1.62 or less
35	1.81 and above	1.65-1.80	1.64 or less
36	1.84 and above	1.67-1.83	1.66 or less
37	1.84 and above	1.69-1.83	1.68 or less
38	1.85 and above	1.70-1.84	1.69 or less
39	1.85 and above	1.71-1.84	1.70 or less
40	1.86 and above	1.73-1.85	1.72 or less
41	1.86 and above	1.75-1.85	1.74 or less
42	1.87 and above	1.77-1.86	1.76 or less
43	1.87 and above	1.77-1.86	1.76 or less
44	1.90 and above	1.78-1.89	1.77 or less
45	1.91 and above	1.79-1.90	1.78 or less
46	1.92 and above	1.80-1.91	1.79 or less
47	1.93 and above	1.81-1.92	1.80 or less
48	1.93 and above	1.82-1.92	1.81 or less
49	1.94 and above	1.84-1.93	1.83 or less
50	1.94 and above	1.85-1.93	1.84 or less
51	1.95 and above	1.85-1.94	1.84 or less
52	1.96 and above	1.85-1.95	1.84 or less
53	1.97 and above	1.86-1.96	1.85 or less
54	1.97 and above	1.86-1.96	1.85 or less
55	1.98 and above	1.86-1.97	1.85 or less
56	1.98 and above	1.87-1.97	1.86 or less
57	1.99 and above	1.87-1.98	1.86 or less
58	2.00 and above	1.87-1.99	1.86 or less
59	2.00 and above	1.87-1.99	1.86 or less
60 or more	2.00 and above	1.88-1.99	1.87 or less



# Your Academic Status

## Standards of Academic Achievement

1. A minimum cumulative grade point average of "C" (2.0) must be achieved to graduate with an Associate degree or Certificate.
2. A student making **Satisfactory Progress** shall have:
  - a. Successfully completed (grades A, A-, B+, B, B-, C+, C, C-, D+, D, or P) 51% or more of the credit hours in which the student enrolled overall, **and**
  - b. Shall **not** be on Academic Probation, Withdrawal Alert Status, or Dismissal Status.
3. A student making **Unsatisfactory Progress** is defined as:
  - a. Being placed on Withdrawal Alert after having enrolled in 12 or more credit hours; having attended at least two semesters; and having received 50% or more W, WP, and/or WE grades overall.
  - b. Being placed on Academic Probation for being below the required grade point average as indicated on the Academic Status Scale (page 82) after having attempted 12 or more credits and having attended Delta College for at least two semesters.
  - c. Being placed on Academic Dismissal for having an academic grade point average which indicates Dismissal Status on the Academic Status Scale (previous page).

## Probation and Dismissal Status Conditions and Procedures

1. **Academic Probation Status:** The Director of Records will issue a letter to all students whose grade point averages indicate they are on Probation Status according to the Academic Status Scale at the end of Fall, Winter, and Spring/Summer Semesters. Students on Probation who plan to enroll the next semester should make an appointment with a counselor to have their curricula and course selections reviewed. Students on Probation may be strongly encouraged to contact the Teaching/Learning Center for diagnostic review and be referred to appropriate tutorial services.
2. **Dismissal Status:** Students who are placed on Dismissal Status at the end of the Spring/Summer or Fall Semesters will be issued Probation Dismissal Warning letters. These letters will indicate they are in severe academic trouble because of their low grade point averages. These students will be expected to seek counseling assistance and recommendations to change directions in order to improve their grade point averages.

Students placed on Dismissal Status at the end of the Winter Semester will be dismissed from Delta College. These students must remain out of Delta College for one academic year (the Fall and Winter Semesters following dismissal letter). Dismissed students have the right to appeal the dismissal action. A written request to appeal must be submitted to the Academic Progress Committee\*.

\*The Academic Progress Committee is composed of the Director of Records or designee, a counselor and an academic Dean or designee.

## Dismissal Appeal

1. Meet with a Delta College counselor, who will provide the student with the Academic Progress Appeal Request Form.
2. Complete fully and return the Academic Progress Appeal Request Form to the Director of Records by the stated deadline.
3. Attend the scheduled Appeal Hearing.
4. If the committee rejects the appeal, the student will remain out of Delta College for one academic year. If the appeal is successfully, the student must follow the conditions set forth by the Appeals Committee.

## Fresh Start Policy

If you wish to re-enroll after an absence from Delta College of three or more years **and** you left with a cumulative grade point average of less than 2.00, you may submit a request to the Director of Records to have your GPA recomputed using only grades earned after enrollment. If the request is approved, all courses previously taken at Delta College will remain on your permanent record/transcript. All course grades prior to re-enrollment will be converted to P/NC grades. Courses with grades of A, A-, B+, B, B-, C+, C will become P grades with credit; all other course grades will become NC grades without credit. You may only use the Fresh Start Policy once. The cumulative GPA and Academic Achievement policy conditions will be computed using all grades earned from the point of re-enrollment. **Note:** Regardless of the number of P grades resulting from this policy, a maximum of twelve (12) credit of P grades may only be applied toward Delta College graduation requirements. You are advised to discuss this option with your Counselor prior to the request.



# Academic Status for Financial Aid Recipients

## Standards of Academic Progress for Financial Aid Recipients

Students must be making satisfactory academic progress toward the completion of a Certificate or Associate degree to be eligible for financial aid.

Standards of Academic Progress for Financial Aid Recipients are applied after students have been enrolled for two semesters and have registered for at least 12 credits at Delta College. All semesters and courses in which students registered at Delta College are included in determining Satisfactory Academic Progress, regardless of whether or not the students received financial aid for those semesters and courses.

### I. Standards of Academic Progress for Financial Aid Recipients

A. Making Satisfactory Academic Progress is defined as earning a cumulative grade point average that is in the Satisfactory Progress Range on the Academic Status Scale\* and not being placed on Academic Probation or Dismissal Status.

1. A student is placed on Academic Probation for having a grade point average below that required on the Academic Status Scale\* after having attempted 12 or more credits and having attended Delta College for at least two semesters.
2. A student is placed on Dismissal Status for having an academic grade point average which indicates Dismissal Status on the Academic Status Scale\*.

\*See the Delta College Catalog, Section IV, Academic Policies & Information for the Academic Status Scale.

B. Making Satisfactory Academic Progress is also defined as having satisfactorily completed 67% or more of all credits in which students have ever enrolled at Delta College.

1. Grades of A, A-, B+, B, B-, C+, C, C-, D+, D, or P are considered to be satisfactory completions.
2. Grades of W, WN, WP, WE, NC-No Credit, I-Incomplete, and E-Failure are **not** considered to be satisfactory completions.
3. For students with repeat grades, the lower grade is considered to be an unsatisfactory completion and the higher grade is considered to be a satisfactory completion.
4. For students choosing the Fresh Start option, grades changed to P are considered to be satisfactory completions. Grades changed to NC are **not** considered to be satisfactory completions. (Students choosing this option should be aware that grades of C-, D+, and D, which are considered as satisfactory completions, will be converted to NC grades, which are not considered to be satisfactory completions.)

C. Satisfactory Academic Progress also requires that financial aid recipients complete the Certificate or Associate degree within a time frame which, by federal regulation, is 150% of the published length of the program. For example, if a student is in an Associate degree program that requires 62 credits, the degree must be completed in a maximum of 150% of 62 credits, or 93 credits including both attempted and completed credits. (Students should consult the Delta College Catalog, Section III, Programs of Study, to find the number of credits required in their Certificate or Associate degree program, then multiply that number by 1.5 to determine the maximum number of credits.)

1. When students reach the maximum number of credits, financial aid will be terminated.
2. All semesters are taken into consideration when determining the maximum number of credits, whether or not students received aid during those semesters.
3. All grades (A through E, P, I, NC, W, WN, WP, and WE) and repeated courses are counted in determining the maximum number of credits.
4. Transfer credit must be taken into consideration when calculating the maximum number of credits; therefore, all credits up to a total of 38 that are transferred into Delta College will be calculated into the maximum number of credits.

### II. APPEALS

A. Students who have been terminated from further financial aid for failure to meet Standards of Academic Progress have the right to appeal. All appeals must be submitted in writing on the Satisfactory Academic Progress Appeal Form to the Office of Financial Aid. Appeals must be received no later than one week before the semester begins. Appeals received after that time will be considered to be appeals for the following semester, unless the students are officially registered in classes (tuition and fees are paid and students are in attendance). Students submitting appeals should state the reasons why satisfactory progress was not made and discuss actions that have been or will be taken to make satisfactory progress in the future. **Documentation supporting the reasons for the appeal must be attached.** Mitigating circumstances beyond the reasonable control of students, such as injury or illness, death of a relative, or other special circumstances may be grounds for successful appeals.

1. If appeals are approved, students will receive an additional probational semester of aid during which they must **EITHER** complete all courses in which they register with grades of C (2.0) or better (no C-, D+, D, E, or NC grades), and with no Withdrawals (W, WP, WE) and no Incompletes (I), **OR** once again meet the Delta College Standards of Academic Progress for Financial Aid Recipients. At the end of the semester, grades will be checked.
  2. If students have the met Standards of Academic Progress for Financial Aid Recipients, aid will once again be awarded. If students have not met these Standards, but have met the conditions stated in No. 1 above, further aid will be granted on a probational semester-by-semester basis. Grades will be checked at the end of each semester before aid is awarded for the next semester to ensure that the student is continuing to make academic progress. This process will continue until such time as the student once again meets the Standards of Academic Progress for Financial Aid Recipients. If it should be found that students have not made academic progress during one of these probational semesters, aid will be denied and the students will have to attend at their own expense until such time as the Standards of Academic Progress for Financial Aid Recipients are once again met.
- B. If the first appeal is not resolved to the satisfaction of the student, a second appeal may be made in writing to the Associate Dean of Financial Aid and Registration, who will convene the Financial Aid Advisory Committee the first week of each month to review the second appeals. The Associate Dean will inform the student of the Advisory Committee's decision, which will be considered to be final.



# Graduation Requirements

## Degrees Granted by Delta College

- Associate in Arts
- Associate in Science
- Associate in General Studies
- Associate in Applied Science
- Associate in Business Studies
- Dual Degree

If your attendance has been **continuous** in the same program you may, for the purpose of graduation, elect either the program in effect at the time of your first registration in the College or the program in effect at the time of your application for graduation. **Continuous attendance is defined as attending a minimum of one semester during each academic year since your first registration.** If your attendance has not been continuous, you must follow the program in the effect at the time of your readmission.

A maximum of 38 semester hours of transfer credit may be applied toward a Delta College Associate degree.

**Associate Degree Requirements:** Students must complete all basic degree requirements, plus specific requirements in one of the Associate degrees listed. All financial obligations to Delta College must be fulfilled before a student is issued a diploma and/or certificate.

## Basic Degree Requirements

1.	Earn a 2.0 minimum cumulative grade point average in an Associate degree program. Students in the occupational curricula must earn a minimum of "C" (2.0) in specified courses. These courses are identified in Section III, Programs of Study.
2.	Earn a minimum of 62 credits.
3.	Successfully complete six credits in content-area writing courses.*
4.	Earn a minimum of two credits in physical education activity courses.
5.	Successfully complete an approved course in American government: POL 103, POL 111, POL 212 or HIS 103.
6.	Earn a minimum of 24 credits by instruction while in attendance at Delta College. You must earn the final credits at Delta to complete a degree. <b>Exception:</b> If 52 or more credits have been completed on a degree program at Delta, the final credits (maximum 12), if approved, can be earned through the Guest credit option at other institutions and transferred back into Delta.
7.	File an application for an Associate degree and/or Certificate with the Records and Registration Office by mid-semester of the final semester of your course work.
8.	You cannot apply more than a total of 12 credits of P/NC course work toward graduation requirements.
9.	Delta College reserves the right to require students to successfully complete "key courses"* in a program within a stated time frame. This may require you to repeat certain courses, even though a passing grade was previously earned. A "key course" is one whose content is essential to skills development and successful performance and where course content is likely to significantly change over time, as determined by divisions.
10.	*Effective with the Fall Semester 1988, all entering students (those with no prior Delta credits) must complete six credits of writing across the curriculum courses to fulfill graduation requirements. Courses are designated by a "W" next to the course code, such as POL 103W, in the Schedule of Academic Classes booklet. Students with previously-earned degrees from accredited colleges and universities are exempt from this policy. College composition courses may not be used to fulfill the College writing requirement.

## Statement of General Education

General Education is the process by which a student acquires the core knowledge and fundamental skills to become an educated person and life-long learner. CORE KNOWLEDGE is the understanding and appreciation of the social, cultural, technological and scientific developments of society. The EDUCATED PERSON has the ability to apply this core knowledge to function effectively and creatively in every aspect of life. The LIFE-LONG learner is able to both update this core knowledge and develop individual potential in a dynamic environment. General Education, therefore, provides the framework essential to the survival and success of our society.



## Certificate Requirements

1. Earn a minimum of 24 credits (a minimum of 15 credits must be completed at Delta) and a 2.0 or above G.P.A.
2. Complete specific courses in an occupational program. See Section III, Programs of Study.
3. Be enrolled at Delta the semester in which Certificate requirements are completed. Any exception to this must be approved by the Vice President of Instruction and Learning Services.
4. Fulfill Basic Degree Requirements Nos. 7, 8, and 9 listed on the previous page.

## Associate in Arts Degree (A.A.) Requirements

1. Fulfill all Basic Degree Requirements.
2. Satisfactorily complete six credits in English composition or an approved equivalent.
3. Satisfactorily complete 8 credits minimum in each of Groups I, II and III listed below.

## Associate in Science Degree (A.S.) Requirements

1. Fulfill all Basic Degree Requirements.
2. Satisfactorily complete six credits in English composition or an approved equivalent.
3. Satisfactorily complete 8 credits minimum in each of Groups I and II plus 20 credits minimum in Group III listed below.

## Group Requirements for Associate in Arts and Science Degrees

**You must complete courses from at least two subject areas listed in each of Groups I, II, and III**

### Group I: Humanities

Art: ART 151, 152, 251, 252, 255, and 258 only  
French (FR)  
German (GE)  
\*History: HIS 111 and 112 only  
Interdisciplinary Humanities (IHU)  
Literature (LIT)  
Music: MUS 100, 111, 112 and 115 only  
Philosophy (PHL)  
Photography (PHO)  
Russian (RUS)  
Sign Language (SL)  
Spanish (SPA)  
Speech: SPH except SPH 100 and 148

### Group II: Social Science

Child Development: CD 116 only  
Economics (ECN)  
\*Biology: BIO 230 only  
\*History (HIS)  
\*Geography (GEO)  
Political Science (POL)  
Psychology (PSY)  
\*Sociology: SOC 200-level courses

### Group III: Natural Science

At least one lab science must be taken  
Biology (BIO)  
Chemical Technology (CT)  
Chemistry (CHM)  
Computer Science (CPS)  
Environmental Science: ENV 230 only  
\*Geography: GEO 111 only  
Geology (GLG)  
Interdisciplinary Science (SCI)  
Mathematics: MTH 110 and above only  
Physical Science (PSC)  
Physics (PHY)  
\*Sociology: SOC 230 only

Specific major program requirements and acceptable courses within the group requirement areas differ among transfer colleges and universities. It is recommended that if you are planning to transfer, you should consult with a counselor to ensure that your planned course work meets the requirements for graduation from Delta College as well as specific requirements at other institutions into which you may wish to transfer.

**\* Note:** HIS 111 and 112 may be included in either Group I or Group II, but may not be counted in both groups; GEO 111 may be included in either Group II or III, but may not be counted in both groups; BIO 230 and SOC 230 may be included in either Group II or III, but may not be counted in both groups.



## Associate in Applied Science Degree (A.A.S.) Requirements

1. Fulfill all Basic Degree Requirements.
2. Satisfactorily complete six credits in English composition or an approved equivalent.
3. Satisfactorily complete all courses listed in one of the Delta College occupational curricula. See Section III, Programs of Study.

## Associate in Business Studies (A.B.S.) Degree Requirements

1. Fulfill all Basic Degree Requirements.
2. Satisfactorily complete six credits in English composition or business communications.
3. Satisfactorily complete all courses listed in one of the Delta College business occupational curricula. See Section III, Programs of Study.

## Associate in General Studies (A.G.S.) Degree Requirements

This degree will meet your needs if your goal is self-enrichment and you are not following a specific occupational or transfer program. All courses offered for academic credit at Delta College are applicable to this degree as per course descriptions. Because of the limited transferability, or in some cases non-transferability, of this degree, it is strongly suggested that you discuss this option with a counselor and consider fulfilling the Group Requirements.

1. Earn a minimum of 62 credits.
2. Earn a 2.0 minimum cumulative grade point average.
3. Fulfill Basic Degree Requirements Nos. 3, 5, 6, 7, 8, 9, and 10.

## Dual Associate Degree (A.A.S. & A.B.S.) Requirements

Dual Associate degrees are available in several occupational fields. The requirements are generally completed simultaneously. Your diploma will list both degrees: Associate in Applied Science (health care curricula) and Associate in Business Studies: Business Management

1. Fulfill Basic Degree Requirement.
2. Satisfactorily complete all courses listed in one of the Delta College occupational curricula. See Section III, Programs of Study.
3. Satisfactorily complete an additional 24 credits minimum, as prescribed for the approved dual degree.
4. A student with no prior college degree would have to earn a **minimum** of 86 credits to earn a Dual Degree (62 for the Health Degree and 24 for the Business degree).

Students who have earned a degree previously may not use courses from that degree to satisfy the requirements of a "Dual Degree". It is possible that a student's previous degree may have included one or more of the required business courses (GB 153, 245). They do not have to retake such classes, but must replace them from the list of approved business courses under the dual degree to complete an additional 24 credits for the Dual degree.

## Subsequent Associate Degrees

Associate degrees can be earned from Delta College following the first earned degree; however, when you complete two or more curricula in the same Division with a difference of less than 24 credits, you will receive only one Associate degree and the transcript shall indicate that you have completed requirements in two or more curricula. Candidates for a subsequent degree must meet the following requirements:

1. Already have earned an Associate, Baccalaureate, or higher degree. Previously-earned credits will be evaluated for transfer to this degree.
2. After issuance of previous degrees, earn a minimum of 24 credits at Delta College.
3. Satisfactorily complete a planned program in one of the following degrees: Associate in Arts, Science, Business Studies, or Applied Science.
4. Fulfill Nos. 1, 7, and 9 of the Basic Degree Requirements.



# Commencement

One of the most memorable moments in your life will be receiving your Certificate or Associate degree from Delta College. You will want to attend Commencement, which will highlight this special moment for you and your family. Sometimes students are unaware of the special importance of attending Commencement. Relatives and friends take particular pride in seeing you achieve this goal. Give your family and friends the special pleasure of seeing you graduate from Delta College.

Although you may complete graduation requirements at the end of the Fall or Spring Semester, Commencement ceremonies are only held once a year at the end of the Winter Semester. Diplomas are mailed to you by the Records and Registration Office approximately four weeks after the end of the semester in which you complete your requirements.

The Commencement Program and your academic transcript will carry special designations if you complete your work with an outstanding academic record according to the following cumulative grade point averages:

3.50 - 3.69 Honors

3.70 - 3.89 High Honors

3.90 - 4.00 Highest Honors

## **Automotive Technology Award**

Given by the Northern Supply Company, recognizes the Automotive Service Technology graduate with an outstanding academic record.

## **Board of Trustees Honor Award**

Presented to the graduate who has earned the highest academic average.

## **William R. Collings Award of Excellence**

The Dow Corning Corporation recognizes a graduate with high personal goals, superior citizenship, and potential for leadership.

## **Davis Music House Award**

Honors the graduate who has achieved outstanding scholastic success in music.

## **Dow Chemical U.S.A. Award**

Recognizes the graduate with the highest accomplishment in science.

## **Fred Dulmage Award**

Recognizes the top ranking graduate in the area of Engineering Technology.

## **Dr. and Mrs. Donald C. Durman Award**

Recognizes a graduate who has demonstrated service and leadership to Delta College and the community.

## **Eaton Corporation Award**

Recognizes the graduate who has achieved a superior scholastic record in mathematics.

## **English Award**

Recognizes a graduate with outstanding scholarship in English studies.

## **First of America Bank Award**

Recognizes the outstanding graduate in finance and banking.

## **Dr. Daniel Kinsey Award**

Characterizes athletic achievement, superior scholarship, and consideration for others.

## **Midland County Bar Association Recognition Award**

Recognizes the outstanding graduate in criminal justice who expects to enter this field directly or who will continue studies at a transfer institution.

## **Frances Goll Mills Award**

Recognizes the outstanding graduate in nursing.

## **Morley Brothers Foundation Award**

Recognizes the outstanding graduate in business and management.

## **Oscar Rau Award**

Recognizes the outstanding graduate in Interior Design.

## **Saginaw Division Award**

Recognizes the outstanding graduate in office systems who has shown high academic achievement and good citizenship.

## **Second National Bank Award**

Recognizes the outstanding graduate in art who has demonstrated excellence of artistic expression in any field of visual arts.

## **Smith Brooker Law Award**

Recognizes academic achievement and superior citizenship of a graduate planning to pursue further study in the legal profession.

## **Paul Sowatsky Memorial Award**

Recognizes the outstanding graduate in the General Motors Automotive Service Educational Program.

## **Lola Bishop Whitney Award**

Recognizes superior academic achievement and promise in the study of a foreign language.



# SERVICES AND OPPORTUNITIES

1. Services and Opportunities
2. Clubs and Organizations



# Services and Opportunities

## Academic Advising

Location: Counseling Center  
Main Building  
K-130  
Between J & K Wings

Phone: 686-9330

Academic advising begins at Orientation when counselors assist you in selecting the course or courses that best fit your needs, achievement level, program requirements, and/or interests. See Section II, The Enrollment Process, Steps to Success for further information about Orientation.

Advising continues throughout your College experience whenever you make an appointment in the Counseling Center. You should make an appointment several weeks before the start of the semester for assistance with course recommendations. By making an early appointment, you will be able to see your counselor at a time that is convenient for you and give yourself time to digest the information you receive, so that you can plan your next semester appropriately.



## Admissions Office

Location: Main Building  
Welcome Center  
Between C & D Wings

Phone: 686-9093

The Admissions Office should be your first stop at Delta College. The staff will assist you, as a new student, with the application and enrollment processes; issue your student number and I.D. card; take you on a Campus tour; provide you with a College catalog and other Delta materials; and will be able to answer your questions or direct you to the Delta staff member who has the answer. Be sure to contact them early and get started down the right path to becoming a successful student at Delta.



## Affirmative Action Office

Location: Main Building  
A-2  
Lower Level

Phone: 686-9546

Delta College is guided by federal and State laws and internal policies which provide for equal opportunity in employment and educational programs and activities. The Affirmative Action Office oversees equal employment opportunity (the right of all persons to work and to advance on the basis of merit, ability, and potential) and affirmation action (the means by which the condition of equal employment is achieved), and seeks to ensure that discrimination and sexual harassment do not take place in employment or in any educational programs or activities.

See page 4 of this catalog for the Affirmative Action Statement and Section VII, Regulations and References, Safety and Security Information of 1992 for further information regarding sexual harassment.

You are encouraged to contact Margaret Mosqueda, Affirmative Action Officer at the location and phone listed above if you have any questions regarding equal employment opportunities, affirmative action, discrimination, or sexual harassment.



## African-American Student Services

Location: Main Building  
H-132

Phone: 686-9121

As an African-American student, you will want to get to know the staff of the Office of African-American Services. They provide information and support to African-American students in the areas of admissions, financial aid, registration, academic advising, tutoring, and program completion. The Office also sponsors an annual event to recognize graduating African-American students and their achievements at Delta College and has established a library to inform African-American students of their unique historical and cultural backgrounds. This Office also stores catalogs of Black colleges for students interested in transferring to one of these institutions.



## Assessment/Testing Services

Location: Main Building  
J100

Phone: 686-9338

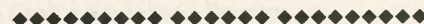
Assessment/Testing Services provides a variety of testing services for new students, currently-enrolled students, business and industry clients, and the community.

As a new student, you will be required to take the ASSET test as part of the Steps to Success Program. See Section II, The Enrollment Process, Steps to Success for more information.

If you have had work experience and/or training that you think may be equivalent to content taught in actual College courses, you should look into the Credit for Prior Learning Program, described in Section IV, Academic Policies and Information.

Assessment/Testing Services are available to business, industry, and public service agencies on a contractual basis. Through these contracts, employers are assisted in identifying individuals whose skills best match job requirements. Career assessment is also available for those seeking a job change.

In addition to these services, the Assessment/Testing Services Office is a test site for numerous national certification and licensing exams. Approximately 25 standardized national examination programs are held on Campus each year. Tests include the General Educational Development (G.E.D.) Test for high school equivalency, the ACT exam for high school students entering college, and several professional exams such as the dental assisting boards and the automotive certification tests.





## Bookstore

Location: Main Building  
Lower Level  
N.W. Corner of Commons

Phone: 686-9030

Once you've registered for your courses, you'll want to go to the Delta Bookstore to get your textbooks. Textbooks are generally available for students to buy starting the first day of each registration period. For the quickest service, buy your books for your courses as soon as you receive your receipt/schedule, since long lines to check out occur during the first week of classes each semester. Check into buying used books and save 25%.

**Refunds:** Textbook refunds are given to students who drop a course or have a course cancelled by Delta. Requests for a refund must be made **within the first ten days of the starting date of the course**. If you have purchased a new textbook from us, it must still be new and **unmarked** (no names, erasures, broken bindings) to receive a full refund. Marked and damaged **new** books will be credited at the used book price. Books purchased **used** will be refunded at the used price.

**Buy-Back:** The Bookstore sets up a book buy-back for students the last two weeks of the Fall and Winter Semesters and the last week of the Spring/Summer Semester. Most books can be resold. Exception: study guides, workbooks, lab manuals, books with fill-in or tear-out pages, and some titles no longer in use at Delta.

In addition to textbooks, the Bookstore sells workbooks, lab manuals, school supplies, drafting equipment, study aids, art materials, sports-wear, magazines and paperbacks, greeting cards, college rings, and stuffed animals and other novelties.



### "I Decided on Delta!"

*"I like Delta's environment. I can't recall a time a teacher didn't have the time to help me."*

James Kazmierski,  
Freeland

## Broadcasting

Location: **TV 19/35**

Main Building  
A-90  
Lower Level  
**FM 90.1**  
Main Building  
D-107

Phone: 686-9350

Delta College is fortunate to be able to serve our students and community through our television and radio facilities which transmit award-winning national and local programs. WUCM-TV 19 has been serving the residents of the Tri-Cities since 1964; WUCX-TV 35, located in Bad Axe/Ubly, began broadcasting at the end of 1986; WUCX-FM 90.1 went on the air in the fall of 1989.

TV 19/35 offers educational, cultural, and public affairs television programming that addresses community concerns and needs. Outstanding national programs, including "Frontline," "Great Performances," "The MacNeil/Lehrer Newshour," "Masterpiece Theatre," "Nova," "Nature," "Sesame Street," "Mister Rogers Neighborhood," and "Square One TV," are a special part of TV 19/35's schedule. Locally-produced programs are designed to address specific local needs that cannot be met by national programming. In 1989, TV 19/35 became the first public or commercial television station in the tri-city region equipped to transmit programming in stereo. In addition, a variety of TV 19/35 programs are broadcast with closed captions for the hearing-impaired viewers. TV 19/35 also provides Spanish language translation of certain programs and descriptive video services (DVS) for the visually impaired.

Delta College shares in the operation of public radio station WUCX-FM 90.1 with Central Michigan University. Listeners enjoy programs from National Public Radio, American Public Radio, and other major program sources, as well as local productions spotlighting jazz and recent trends in new music.

Delta Broadcasting's services to the community include outreach efforts, which involve working with a variety of local agencies, organizations, and volunteers to increase understanding of problems and possible solutions through the sharing of information. By combining local programming efforts, national documentaries, and grassroots involvement, Delta Broadcasting has created a greater awareness of local concerns, including drug abuse, adult illiteracy, teen pregnancy, child care, hazardous chemical spills, AIDS, and the environment.

Delta Broadcasting is more than TV 19/35 and FM 90.1. It also oversees the Broadcasting/Telecommunications (BRT) Program, which is taught by Delta Broadcasting staff. Course work leads to an Associate degree and students gain valuable hands-on experience both by working on locally-originated programs and in broadcasting operations by taking on-air shifts in the TV 19/35 Master Control Room or FM 90.1 Studio.



Jeremy Waller  
Pete Studder



## Career Planning Center

Location: Main Building  
Lower Level  
East Concourse

Phone: 686-9072

If you need assistance in choosing or planning a first career or in changing to a new career, be sure to visit the Career Planning and Placement Services Office. Helpful staff can direct you to career information and provide career guidance and counseling.

The following computerized career guidance systems are also available to you as you do career planning:

**SIGI-PLUS:** allows you to examine your work values, interests, and skills; identify occupations that match them; gather information on various careers; and learn strategies for realistic decision-making.

**Michigan Occupational Information System (MOIS):** provides you with a list of possible occupations based on the answers to a series of work-related questions. It includes State and national information on earnings and outlook, as well as educational opportunities throughout the State, including costs, admissions requirements, and contact persons.

**EUREKA Micro-Skills Inventory:** this allows you to select skills you would like to use in a career and provides you with a list of occupations in which you would need those skills.

To use these career guidance systems plus many other career guidance tools, stop in at the Career Planning and Placement Center.



## Chicano/Latino Student Services

Location: Main Building  
H-Bay

Phone: 686-9125

If you are a Hispanic, Asian, Native American, or international student, you will want to get to know the staff of the Office of Chicano/Latino Services. Staff members provide information and direct support for you in the areas of admissions, financial aid, registration, academic advising, and program completion. Yearly activities to inform the College and community of the unique cultural, historical and linguistic heritage of Chicano/Latino students are also sponsored.

Assistance to students can be arranged for either day or evening hours both on the Campus and at the off-Campus locations.



## College Relations Office

Location: Main Building  
A-196

Phone: 686-9227

Marketing communications in public relations, special events, and personal representations to the community are the major activities of the College Relations Office. Contact this Office for information regarding College events, academic course offerings, Corporate Services work training, community services, and the student calendar.



## Community Services

Location: Main Building  
A-76  
Lower West Concourse

Phone: 686-9412

The Office of Community Services serves the various needs of our community through programs designed for adults as well as children. If you need to refresh or upgrade your job skills or learn new skills, or if you want to pursue some creative or vocational interest, you will want to look into the variety of occupational training and personal enrichment opportunities available through Community Services. Most of these activities are not offered for credit and are not applicable toward a Delta College academic Certificate or degree, nor will they transfer into another college.

In addition to the above, continuing education opportunities are available to the following professions: dental assisting, medical assisting, phlebotomy, health unit coordinating, nursing, real estate, locksmithing, chartered property and casualty underwriting (CPCU), teacher assisting, travel agent training, floral designing, upholstery, American Society of CLU/ChFC, Automotive Specialties, American Institute of Banking, Institute of Financial Education, and American Management Association. In some cases, you can earn CEU's which are applicable to recertification and relicensure.

Most courses are subject to the standard tuition and fees. Some courses may have an additional fee added to cover special expenses. You should consult the Schedule of Community Services Classes for information on offerings, costs, and registration procedures.



## Conference Services

Location: Main Building  
Lower Level

Phone: 686-9035

Food and Conference Services schedules conference and meeting rooms for various College and community events and caters meals for special events for both the College and the community. Contact the Food and Conference Services Office for details.



### "Counselor's Quote"

*Jerry Boehm: Valley Lutheran High School*

*"I think that students who choose to stay home could not pick a better school than Delta. The counseling, instruction and support along the way gives the students an excellent start."*



## Cooperative Education

Location: Allied Health Building  
F-40  
Lower Level

Phone: 686-9474

If you are interested in working in a job that will give you experience related to your studies, you will want to look into the Cooperative Education Program. This Program is open to students who are majoring in general business studies, business administration, fashion merchandising/interior design, accounting, office/clerical, computer information systems, criminal justice, engineering and science technology, pre-engineering, broadcasting, waste water treatment technology, chemical technology, and science, and are enrolled in at least six credits. Co-op pay ranges from \$4.25 to \$12 per hour. Major co-op employers include Dow Chemical North American, Dow Corning Corporation, Saginaw Division General Motors Corporation, VA Medical Center, Delta College, and area businesses. As a co-op student, you would usually work between 12-30 hours per week.

To be considered for co-op, you should submit to the Cooperative Education Office a co-op application form, an updated resume, and a copy of your most recent transcript from the Records and Registration Office. If you are a high school student, submit your final high school transcript. You should also have one year or more of studies remaining at Delta before graduating or transferring. Once you are hired into a co-op position, you will be required to enroll in the appropriate co-op academic course during the Fall and Winter Semesters. The co-op credits are included in the total number of credits required each semester and may be used as elective credits in your academic program.

You will need a grade point average of 2.0 or better to be eligible for co-op employment; a grade point average of 2.6 or better to be eligible for co-op employment with Dow Corning, Saginaw Division General Motors, and VA Medical Center; and a grade point average of 2.7 or better to be eligible for co-op employment with Dow Chemical North American. You will be required to enroll in at least six credits for employment with Saginaw Division General Motors, Delta, and area businesses; and to enroll full-time (12 credits) for employment with Dow Chemical North American, Dow Corning, and VA Medical Center.



## Corporate Services

Location: International Centre  
310 Johnson  
Saginaw

Phone: 758-3602

Corporate Services is a major training services unit of Delta College which develops, delivers, and manages training for business and industry, reinforcing the importance of cooperative efforts of education, private industry, and the public sector. Employees of 505 organizations in 23 states and 20 foreign countries are trained in partnership with local economic agencies, Chambers of Commerce, and professional organizations and associations. For further information about these programs, see Section III, Programs of Study.



## Counseling Center

Location: Main Building  
K-130  
Between J & K Wings

Phone: 686-9330

Many important decisions and situations will confront you while you are a student at Delta College. You will need to make decisions regarding courses, curricula, and careers. You may become confused and upset or the stresses of your college or personal life may occasionally interfere with your academic achievement. These are the situations for which our counseling staff provides assistance. The staff is available both by appointment and on a walk-in basis. If you need simple, quick information or your questions will take only five or ten minutes to answer, you should take advantage of walk-ins. If your questions require more time, notations in your folder for future reference, or are of a personal nature, then you should make an appointment.

Your first contact with the counseling staff will likely be at Orientation. See Section II, The Enrollment Process, Steps to Success for further information about Orientation. After enrollment, there are many services available to you through the Counseling Center. These include:

**Academic Advising:** See this Section, Academic Advising.

**Personal Counseling:** Occasionally you may feel stressed from situations in your life. Counselors can help you to identify and clarify problems and find personal resources to cope successfully. Personal counseling is a strictly confidential relationship between you and your counselor.

**Crisis Counseling:** A counselor is available daily for students in crisis. You may go to the Counseling Center on your own or be referred by a staff or faculty member. The counselor will help you clarify the immediate issues and provide support in helping you re-establish balance. If needed, you will be referred to an appropriate agency outside Delta.

**Career Guidance:** Answers to questions such as, "What career, what major, what college?" are the outgrowth of understanding yourself. They require time and thought; assessing your interests and abilities; realistic planning and career information; and recognizing your own style, purposes, and values. Your counselor can help you with all of this, and you can discuss your current situation and your hopes, dreams, fears, and questions. Delta also offers career and life development courses, many of which are taught by the counselors. See Section VI, Academic Course Descriptions, under ABS (Applied Behavior Studies).

**Transfer College Information:** See Section III, Programs of Study, Transfer Programs and Transfer Procedures.



## Criminal Justice Training Center

Location: Main Building  
G-127  
Saginaw International Centre

Phone: 686-9108

Delta College has been designated as one of the Regional Criminal Justice Centers in the state by the Michigan Law Enforcement Training Council and is supported by state funding to offer a wide variety of training courses for rural and urban police officers. The Training Center also has offices in the Delta College International Centre, 310 Johnson, Saginaw, Phone: 758-3600.

The Basic Police Training School offered at Delta for newly-hired officers is required by law. Center in-service training and professional development for currently-employed officers and security personnel includes courses covering topics such as civil liberties, criminal law, traffic radar, disaster control, and white collar crime; specialized one-day seminars and conferences on topics ranging from arson investigation to traffic control; Reserve Police Officers Training; and full-week state and national conferences such as Advanced Criminal Investigation, The National Polygraph Workshop, and the Hostage Negotiation Seminar. National investigative teams from recent transportation disasters, as well as top crime experts, are among the individuals who provide instruction and technology.



## Dental Hygiene Clinic

Location: Allied Health Building  
F-140

Phone: 686-9469

The Dental Hygiene Clinic provides you with the opportunity for oral hygiene services. These services are provided by the Dental Hygiene students under the direct supervision of state-licensed Dental Hygienists and Dentists and include: cleaning teeth, radiographys (X-rays), oral examinations, oral cancer examinations, topical fluoride treatments, and oral hygiene instructions. Minimum fees are charged for these services to cover the cost of disposable products used during your two-hour appointment. For an appointment, phone the Clinic.



## Disabled Students

Location: Main Building  
B-116 & H-137

Phone: 686-9096

If you have a disability and need assistance, you will want to get in touch with the Office of Disabled Student Services. The staff provides direct and support services to students with disabilities, in order to accommodate their unique needs. These include: instructional aid services, interpreter services, reader services, adapted equipment, orientation to the Campus, and assistance with College procedures.

If you wish to make use of any of these services, you need to register with the Office. To ensure that the services are provided in a timely fashion, you should contact the Office at least two weeks prior to your enrollment in the College. You may certainly refer yourself, and the Office also works with Michigan Rehabilitation Services, the Michigan Commission for the Blind, Veterans' Rehabilitation Services, and the Intermediate School Districts.



## Financial Aid Office

Location: Main Building  
Welcome Center  
Between C&D Wings

Phone: 686-9080

If you need financial help in order to go to college, then you will want to go to the Office of Financial Aid. The goal of the financial aid programs at Delta is to eliminate the economic barriers that prevent you from meeting your educational goals. Available, if you apply and are qualified, are grants, part-time employment, scholarships, and loans. It is extremely important to apply as early as possible for financial aid, since the application process can take two to three months; aid is awarded on a first-come, first-served basis; and funds in some of the programs run out early. See Section II, The Enrollment Process, Financial Aid for application and program details.



## Fire Science Academy

Location: Main Building  
A-55  
Lower West Concourse

Phone: 686-9437 or  
686-9438

The Fire Science Academy is jointly sponsored by the Delta College Office of Corporate Services, the Michigan Fire Fighter Training Council (MFFTC), and representatives of local fire departments who serve on the Academy's Planning Committee. Through this partnership, Delta has been designated by the MFFTC as a Regional Training Center. The Academy provides a variety of training programs, including Fire Fighter Training; Officer I, II, and III Schools; and professional outreach programs. All of the programs develop basic and advanced skills necessary for the trainees to be effective members of the professional fire-fighting community.



## Food Services

Location: Main Building  
Commons  
North End, Lower Level

Phone: 686-9035

There's no doubt about it! Studying makes you hungry, so you'll want to visit our Food Services. Here you can purchase snacks or full meals at our mini food court featuring Taco Bell and enjoy the lounge facilities. In addition, vending machines in various locations throughout the Main Building and the Fine Arts Building offer hot and cold drinks, candy, gum, and other snack foods.



## Foundation Office

Location: Main Building  
A-45  
Lower West Concourse

Phone: 686-9224

The Delta College Foundation is a nonprofit, tax-exempt educational corporation organized under Michigan law to receive gifts, bequests, and scholarships on behalf of the students, the staff, and the College. The primary purpose of the Foundation is to solicit private sector financial support to extend the broadest possible opportunities for educational benefits to the residents of Bay, Midland, and Saginaw counties.

The Foundation provides funding for student financial assistance, institutional enrichment, construction and maintenance of College buildings, purchase of instructional/teaching equipment, faculty/staff professional and personal growth activities, and innovative projects which benefit the College and community.

The scholarships provided by the Foundation include:

- Donald J. & Betty Carlyon Scholarship
- Delta College Business Division Endowment
- Delta College Employee Scholarship for Students
- Delta College Foundation Student Scholarship Endowment
- Louis W. Doll/Patricia Drury Scholarship
- Gene R. Duckworth Scholarship
- Robert M. Gohlke Memorial Scholarship
- Beki Gray Hadley Scholarship
- Honors Student Scholarship
- Walter & Sophie Kilar Scholarship
- King's Sons & Daughters Scholarship-Saginaw County
- Oscar W. Kloha Scholarship
- W.R. & Edith Knepp Scholarship
- W.R. Knepp, Jr. Scholarship
- Gary Laatsch Scholarship
- Morley Brothers Foundation Scholarship
- Wendell R. & Ethel G. Mullison Scholarship
- William H. "Buddy" Oates Scholarship
- Renee L. Rookard Scholarship
- Clifford & Grace Saladine Scholarship
- Van DeWitt & Ruth Simmons Scholarship
- Paul Sowatsky Scholarship
- Lola Bishop Whitney Scholarship
- Jack & Alice Wirt Scholarship
- Alton Sr., Alma & Alton Jr. Zucker Scholarship

Program endowments provided by the Foundation include:

- Donald J. & Betty Carlyon Endowed Teaching Chair
- Ormond E. Barstow & Ludo K. Frevel Award for Scholarship Achievement Endowment
- Global Education Endowment
- Delta College Foundation Endowment
- DeVere Sturm Family Endowment





## Health, Physical Education, and Recreation (HPER) Facilities

Location: Main Building  
North End

Phone: 686-9025

To add a little fun and fitness to your life, you can take advantage of our HPER facilities. We have something for everyone. There are eight racquetball courts, two gymnasiums, a dance room, and a weight room. Used for College classes, these facilities are also available to the public on weekends during the Fall and Winter Semesters for a fee. Phone the HPER Office for details.

The newest addition to the facilities is the Fitness Center, which features a Universal aerobic super circuit and a variety of other aerobic exercise equipment. Through a required orientation session, you can have an individualized workout program designed just for you and a sophisticated computer program periodically monitors your progress. When not in use for College fitness classes, this facility is available for Delta employees and students, as well as the general public for a minimal cost. Phone the Fitness Center at 686-9518 for open hours and rates.

There are also outdoor facilities available to the general public at no charge when not in use for instructional purposes, team practice, or sports events. These include tennis courts, archery targets, a soccer field, and a golf driving range and putting green.

## Health Services

Location: Main Building  
B-102

Phone: 686-9333

To assist with your health needs, a registered nurse is available during the day. She will provide emergency first aid; direct treatment for minor injuries or illnesses; health screening, including blood pressure, T.B. skin tests, and weight; health referrals and assistance with locating medical assistance; health counseling and preventative health care materials; dispensing of across-the-counter drugs as appropriate; health insurance information and applications; and maintenance of student health records.

## Honors Program

Location: Main Building  
E-136

Phone: 686-9091

If you are a highly-motivated learner capable of critical/creative thinking, the Honors Program is designed to meet your needs. Honors courses provide much individual attention as well as interaction with instructors and peers. You can enroll in the full Honors Program; select individual Honors sections; or receive Honors credit for non-Honors courses by arranging with instructors to complete an Honors option (extra reading or writing, a project, class presentation, etc.).

To qualify, you must meet one or more of the following criteria: graduate in the top 10-15% of your high school class; have a cumulative high school grade point average (GPA) of 3.5 or higher; have a combined score of 1100 on the SAT or a composite score of 25 on the ACT; have completed 12 college credits with a 3.2 or higher GPA; receive a strong teacher recommendation; do well on the ASSET test; or demonstrate equivalency of the above through portfolios, projects, awards, and/or an interview with the Honors Program Director.

If you are a motivated student seeking a challenging classroom environment and you can demonstrate a commitment to learning, you are likely to be admitted.

## International/Intercultural Programs

Location: Main Building  
A-58

Phone: 686-9485

Lower West Concourse

The mission of Delta's International/Intercultural Programs is to create an awareness of global interdependence by advancing opportunities to foster a global perspective, respect diversity, value the environment, and develop skills necessary to work and live in an evolving world community.

Supported by the International/Intercultural Steering Committee, the various Programs actively seek to further this awareness through curricular support for students and faculty, recruitment of students and faculty, and partnerships with the community. Specific activities include: sister college linkages, international study tours, faculty and student exchanges, community forums on global/local issues, Global Awareness Week, a Peace Corps partnership, and sponsorship of the International Student Organization.

## Library

Location: Main Building

Phone: 686-9560 Reference

Main Entrance:

686-9310 Circulation

Across from G-Wing

686-9307 Audio/Visual

686-4131 FAX

The Library is available to assist you with class work, business, or personal needs. The collection consists of monographs, periodicals, and newspapers and is a partial depository of United States government documents. The collection may be accessed by the on-line card catalog (VALCAT), CD-ROM indexes, or printed indexes. Full text articles from recent issues of the New York Times and The Wall Street Journal and over 400 journals are available on compact disk (PROQUEST). PROQUEST also indexes about 1600 journals. Many other indexes and reference publications are also available on CD-ROM. If a book or periodical is not available at Delta, you may request it through inter-library loan. At least two weeks must be allowed for delivery.

The Library reference services include Library tours, bibliographic instruction, and personal research assistance by professional librarians.

Audiovisual equipment such as slide projectors, record players, tape recorders, and video players is available for your use within the Library (see the Senate Handbook for guidelines). Audiovisual work stations are also available for individual instruction and study.

## Ministry Services

Location: Main Building  
H-144

Phone: 686-9265

If you feel the need to talk or want to get in touch with the church community, the services of Campus Ministry are always available to you, providing counseling, crisis intervention, referrals, and educational programs and studies, and acting as a liaison between Delta and the church community.

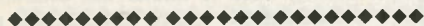


## Multi-Media Learning Lab

Location: Allied Health Building  
Second Floor

Phone: 686-9479

The Multimedia Learning Lab is an open lab, available to provide you with flexible, independent learning activities which support the instruction you receive in the classroom. It is made up of independent work spaces with open access (days, evenings, and weekends), and provides technical support staff, services, and materials. Preferential access is given to students in five areas: allied health; nursing; science; technical; and health, physical education and recreation.



## Off-Campus Centers

For information, contact Instructional Services

Location: Main Building  
E-130

Phone: 686-9221

Between D & E Wings

Delta College offers courses and services in approximately 30 off-Campus locations, giving you the opportunity to take many courses at sites that may be closer to your home than the main Campus. The five major Off-Campus Centers are:

First Ward Community Center  
1410 N. 12th  
Saginaw

Phone: 754-4443

Industry Education Center  
3024 James Savage Road  
Midland

Phone: 496-3368

International Centre  
310 Johnson  
Saginaw

Phone: 758-3600

Midland Center  
1025 E. Wheeler Road  
Midland

Phone: 835-2240

Ricker Annex Center  
1925 S. Outer Drive  
Saginaw

Phone: 752-7500

Since the number of courses offered at these Centers varies, the number of services offered also varies. Some of the services offered at the six Centers listed above include computer labs, tutoring, study skills development, make-up testing, limited advising/counseling services, referral to appropriate on-Campus offices, forms and information needed for Delta processes, and food and beverage vending machines.

Check the Schedule of Academic Classes booklet for a listing of courses offered each semester at off-Campus locations.

### "I Decided on Delta!"

*"I chose Delta because they offer classes at so many different locations! I can take a class at my local high school or one of the off-Campus centers, or I can drive out to Campus. No matter where I'm at, it never takes longer than 45 minutes to get there."*

Tom Grosskopf  
Midland

## Placement Services

Location: Main Building  
Lower Level  
East Concourse

Phone: 686-9074

If you are looking for employment assistance, be sure to take advantage of the services of the Career Planning and Placement Office.

When you want a job, the staff is there to help. Delta students, former students, and alumni, along with graduates from other Michigan public colleges, may register for employment services. As positions become available, you will be matched to them by computer, notified of openings, and referred to prospective employers. Many full-time and part-time jobs are available in communities surrounding Delta.

Assistance is also available if you are seeking student employment while attending Delta. Many jobs are available on-Campus, but there are also a variety located in the community. If you are interested, you should inquire several months in advance of the time you anticipate beginning a job.

The staff can also assist you in developing employability skills through workshops and videos which teach effective resume-writing, job-search techniques, and interviewing.



## Planetarium

Location: Main Building  
B-203

Phone: 686-9412 or  
686-9414

Across from East Main Entrance

Over 100 shows are featured each year in Delta's Planetarium, which serves students, individuals, and school and community groups. Approximately 70 persons can be seated for each show. Admission is free and shows must be scheduled at least one week in advance. The Planetarium is open Mondays through Fridays. If you're interested, phone for details.



## Police Department

Location: Main Building  
Room B-102

Phone: 686-9111

Across from East Main Entrance

If you should need their assistance, the officers of the Campus Police Department are available to you 24 hours a day, seven days a week. They are all certified by the Michigan Law Enforcement Officers Training Council and are Deputy Sheriffs of Bay County. They are charged with the enforcement of all College rules and regulations; rules of student conduct; State, federal, and local laws; and the investigation of crimes and accidents. Their services include: protection of persons and property; traffic control and enforcement; enforcement of parking regulations; public and motorist assists; crime prevention and prevention programs and information; operation of the College Lost and Found; and emergency first-aid.





## Pre-School Center

Location: Y-Building  
Northeast of Main Building

Phone: 686-9334

If you have children between the ages of 2 1/2 and 6 who need quality child care, the Pre-School Center may be your answer. The Center provides a balanced schedule of daily activities based on the developmental needs of pre-school children, including intellectual stimulation, emotional stability, large motor activity, rest, and nourishment. Child care is available during the Fall and Winter Semesters, serving the children of Delta students first, and the children of faculty and staff as space permits. Contact the Pre-School Center for details and fees.



## Records and Registration Office

Location: Main Building  
A-Wing

Phone: 686-9305, Records  
686-9397, Registration

You will want to get acquainted with the services of the Records and Registration Office, because you will need to use them often during your enrollment at Delta. Some of those services include: conducting phone and on-campus registration, processing adds and drops, mailing grade reports, filling transcript requests, evaluating transcripts from other colleges for possible Delta credits, certifying for graduation, and providing diplomas.

For details about registration, adding courses, and dropping courses, see Section II, The Enrollment Process, Registration.

For details about grades, transcripts, and graduation, see Section IV, Academic Policies and Information.

For details regarding acceptance of transfer credit, see Section IV, Academic Policies and Information, Acceptance of Credits.



## Recycling Program

Location: Physical Plant Office  
A-199

Phone: 686-9209

As a student at Delta College, you'll have the opportunity to participate in the College recycling program. Delta College is involved in the collection of computer paper, newspaper, mixed office paper, cardboard, phone books, and polystyrene. Collection bins are conveniently located throughout the Campus. A successful recycling program requires the cooperation and dedication of everyone on Campus. For an information packet listing recyclables and collection sites, stop in or phone the Office. It's our environment! Let's take care of it!



## Single Parent, Displaced Homemaker, and Sex Equity Grant Programs

Location: Main Building  
Lower East Concourse

Phone: 686-9390

The Single Parent, Displaced Homemaker/Sex Equity Grant is part of the Carl D. Perkins Vocational Education Act. The Grant is designed to aid students in vocational programs and is a supplement to federal financial aid.

To qualify, you must be in an approved vocational program and be a single parent, a displaced homemaker, a single pregnant woman, or a non-traditional job trainee.

The Grant covers the cost of tuition, fees, and books after Federal Pell Grant dollars have been exhausted and also pays for Community Education courses not eligible for Federal Pell Grant funds. Other costs, such as uniforms, may also be covered for qualified students.



## Speaker's Bureau

Location: College Relations Office  
Main Building  
A-196

Phone: 686-9490

To assist you with programming for your club or organization, Delta College faculty and staff members are available free of charge to speak on a variety of topics in areas such as the arts, community issues, political issues, economic issues, and many more. Take advantage of this service and provide quality programming for your group.



## Teaching/Learning Center (T/LC)

Location: **Main Building**  
Southeast End  
Lower East Concourse  
**Midland Center**  
Room 20  
**Ricker Center**  
Room 7

Phone: 686-9314

835-9340

752-7000

If you are looking for assistance in meeting your educational goals, look into the services of the TLC. These services are designed to help you make the educational process as rewarding and effective as possible. All services are free.

An experienced staff of professional educators provides help with reading/study skills, mathematics, and specific assignments. Special services are available to learning disabled/dyslexic students.

Peer tutoring is also available to you and is offered in three ways: one-on-one, walk-in, and through a special peer mentoring program that assigns a tutor to a class. Every effort will be made to find a qualified tutor for you if you need help. Student tutors must meet stringent criteria to make sure that you will benefit from the experience. Except in cases when certain equipment is required, tutoring is done in the Teaching/Learning Center.

The T/LC also offers workshops during the Fall and Winter Semesters. Topics include: general study skills, test-taking, writing research papers, test anxiety reduction, time management, math anxiety reduction, memory techniques and more. Typewriters, computers (IBM and Macintosh), VCR's, videos, and computerized learning packages are available for your use.

Services are also available in varying degrees at the Midland Center, the Ricker Center, and First Ward.





## Tech Prep Office

Location: Main Building  
E-130

Phone: 667-2206

Delta College's Tech Prep Office serves as the coordination headquarters for Tech Prep related activities, seminars, and services sponsored by the Saginaw Valley Tech Prep Consortium. In addition to Delta College, the office services all consortium public school districts in Arenac, Bay, Midland, Saginaw, and Tuscola counties. Each of the 47 participating education agencies are working together to establish closer Tech Prep curriculum linkages between Delta College and participating secondary schools. Once in place, the Saginaw Valley Tech Prep curriculum will provide expanded educational opportunities for students enrolling in Delta's occupational programs.

Anyone interested in learning more about Delta's Tech Prep curriculum is encouraged to contact the Tech Prep Director.

## Telelearning Networking Services (TNS)

Location: Main Building  
A-61  
Lower West Concourse

Phone: 686-9398

TNS delivers academic and non-academic courses, information, and professional development through telecommunications technologies, electronic media, and information systems to learners at various locations.

Services offered by TNS include:

Telecourses: College credit courses broadcast over Public Television or cable, and non-broadcast using VCR tapes.

Interactive Television: A system that links two or more sites for simultaneous voice, video, and data exchange.

Teleconferences (Videoconferences): Live, interactive programs/meetings transmitted via satellite, designed to meet the informational, educational, and training needs of geographically-dispersed audiences in business, industry, government, and education. Professionals are provided up-to-date information, meet with experts, engage in local discussions, and call in questions to the presenters.

Satellite Resource Programs: Live or taped teleconferences, seminars, workshops, meetings, and resource programs from around the world.

Audioconferencing: Facilitates live, interactive conferences, meetings, and class discussions over the phone lines with individuals or groups at various locations.

For details of all TNS services, contact the Telelearning Office.



## Theatre

Location: Fine Arts Building  
S-209

Phone: 686-9440

If you enjoy being on the stage, either acting or working behind the scenes, then you'll want to get involved in Delta's Theatre productions. Theatre at Delta has had a long and varied history since the early days of the College. There are usually two productions each year, one in the fall and one in the spring. Auditions are posted in time for you to plan your classes to include your extra-curricular theatre activity.



## Veterans Services

Location: Main Building  
A-101

Phone: 686-9465

If you are a veteran, you will want to be sure to visit this Office. The staff of veteran-students understands your needs and will assist you in obtaining your veterans' educational benefits. They also provide information regarding college credit for your military training/experience, loans, and helping services and/or any other entitlements allowed through the U.S. Department of Veterans Affairs. See Section II, The Enrollment Process, Veterans/Reservists Information for further details.



## Volunteer Services

Location: Main Building  
Lower West Concourse

Phone: 686-9336

If you want to have your own life enriched while contributing to the fulfillment of the needs of others, you'll want to take advantage of the service learning opportunities provided by the Volunteer Services Office. Volunteer Services are provided through a partnership with the Voluntary Action Centers of Bay, Midland, and Saginaw counties. You will be placed in community and College work settings which will broaden your educational and work experiences, give you on-the-job insight into a career, contribute to the betterment of the community, and build your self-confidence. It's an experience you won't want to miss.



## Welcome Center

Location: Main Building  
C-130  
Between C & D Wings

Phone: 686-9093

Looking for the location of an on-Campus activity? Wondering how to get to one of our Off-Campus Centers? Have some general questions about Delta? Stop in at the Welcome Center. You will receive a friendly greeting, be provided with directions and Campus maps, and find out where to go for what. You will be able to obtain an overview of our wide variety of program offerings, events, and workshops, and learn more about College services. Generally, all information about Delta College that you, as a visitor or prospective student, might want or need is available at the Welcome Center. In addition, they are happy to provide Campus tours.





# Clubs and Organizations

Look over the following clubs and organizations that are available for your participation and see if there is something that appeals to you. If there isn't, but you would like to start a group that addresses your interests, you can do that too. For information about our current clubs and organizations or to start a new one, contact the Office of the Vice President of Student Services located in A-119 in the Main Building.

## Baha'i Club

The Baha'i Club promotes the unity of the races and religions at Delta College and encourages the sense of equality of the sexes, ages, and classes.



## Collegiate

The Delta Collegiate is our award-winning student newspaper, which is published weekly during the Fall and Winter Semesters. It is distributed free in the College Commons and other locations throughout the College.



## Computer Users Group

This organization provides students and faculty the opportunity to learn more about computer software and to explore issues as they relate to their own PC needs. This is done through vendor demonstrations, shows and conventions, magazines, and the sharing of information.



## Delta Epsilon Chi (DECA)

DECA is a national business association for college students with career objectives in marketing, merchandising, and/or management. The purpose of DECA is to enhance the value of education in these areas which will contribute to occupational competence and promote understanding and appreciation for the responsibilities of citizenship in our free enterprise system.



## International Student Organization

The International Student Organization was founded to meet the social and cultural needs of international students at Delta. Emphasis is on supporting the international students while giving American students the opportunity to experience other cultures and countries.



## Inter-Varsity Christian Fellowship

The Inter-Varsity Christian Fellowship provides a place for the encouragement and challenge of Christian fellowship and Bible study.



## Judo Club

The Judo Club promotes both the art and sport of Kudokan Judo through studying Judo and participating in competitions.



## LaRaza

This organization promotes the Hispanic culture and innovative and creative means to exhibit mutual respect for all cultures. Its members are committed to higher education and community service for all Hispanic students in the community and each member bears a special and continuing responsibility to reinforce and reflect those values that will support and encourage younger students in the community.

## Legal Assistant Association

This Association serves as a communication link between Legal Assistant students, alumni, and faculty outside the classroom, providing students with an opportunity to network with other legal professionals and helping to develop high standards and credibility for the Legal Assistant Program and the paralegal profession.



## People on Wheels

This organization promotes accessibility, awareness, and advocacy for persons with disabilities.



## Phi Theta Kappa International Honor Society

Phi Theta Kappa is the largest honor society for two-year colleges. It promotes scholarship, leadership, service, and fellowship among its members as well as for the College and the community.



## Respiratory Care Association

This Association promotes the profession of respiratory care and the increased awareness of pulmonary health care.



## Running and Rowing Club

This Club was established to promote the sports of running and rowing for student wellness.



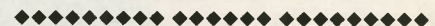
## Science and Technology Organization

This Organization is designed to explore science and technology and to investigate science careers.



## USS Solar Wind

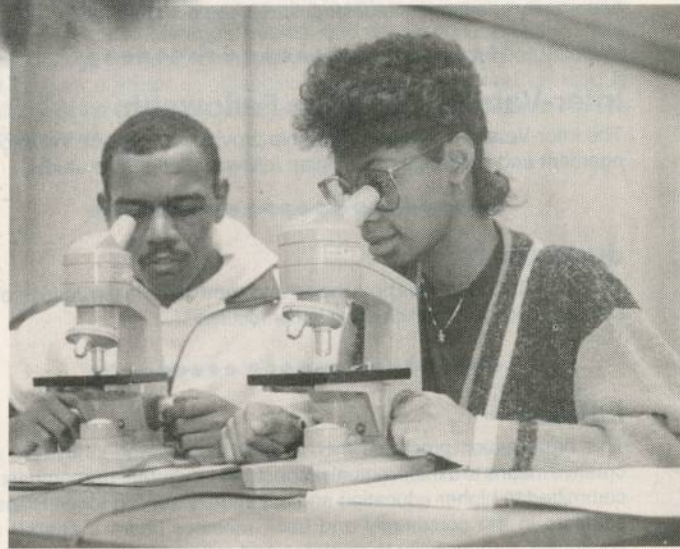
Members of this group share with others the enjoyment of Star Trek and further the knowledge of science fiction.



## Volleyball Club

This club promotes volleyball at the collegiate level as recreation for all students. It gives students the opportunity to compete with other colleges and universities.







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# THE ACADEMIC COURSE DESCRIPTIONS

1995 - 1996

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1. Academic Course Information
2. Academic Course Abbreviations
3. Academic Course Descriptions

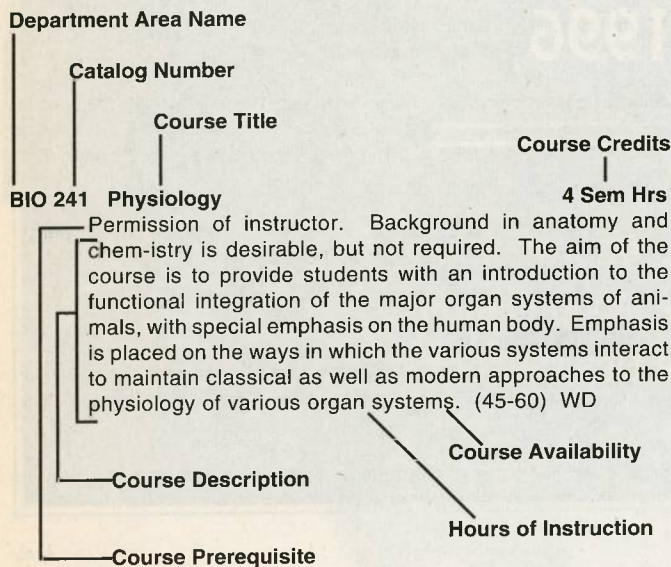




# Academic Course Information

Courses listed in this section are those which Delta College is approved to offer; however, inclusion of a course does not obligate the College to offer the course in any particular semester or year. Most of the courses listed will be offered at least once during a complete academic year. A schedule of courses is published in March for the Spring/Summer Semester, in early April for the Fall Semester, and by early November for the Winter Semester. **Courses in this section, as well as in the Schedule of Academic Classes booklet published each semester, are listed in alphabetical order by subject area name according to three-digit course numbers.**

## An Example



## Course Credits

1. Each course is assigned a number of credits which generally indicates the number of hours per week the course meets. Courses with labs and occupational courses, however, generally meet more hours than the number of credits they carry.
2. Tuition rates are assessed on a per-credit-hour basis, and vary depending on your residency classification. Total tuition for each course must be paid at registration time.

## Course Prerequisites

1. Requirements which must be met or courses which must be taken before enrolling in a specific course are listed as a Prerequisite at the beginning of each course description.
2. Courses not having a prerequisite stated may be taken by any student.

## Course Descriptions

1. Below each course number and title, a brief course description is provided. You should read this description carefully to be sure you are qualified to take the course and that the course content meets your needs and interests. If you need additional information, you may contact the Chair of the Division which offers the course or the course instructor.
2. Instructors often give supplemental course information (i.e., course outline, syllabus, tasks and competencies, etc.), during the first week of classes, so students will know specific course procedures, grading criteria, and course objectives. Circumstances such as illness, inclement weather, class composition and size, or the introduction of timely material may necessitate some adjustments. The College recognizes the right of the faculty member to exercise professional judgment in making such adjustments.

## Hours of Instruction

The numbers given within parentheses at the end of each course description indicate the total number of hours each course will be scheduled within a semester. The first number specifies total lecture hours and the second number specifies total laboratory or clinical hours for the course. Skilled Trades courses, however, only have one number (clock hours), since lecture and laboratory hours have been combined.

## Course Availability

The letter codes at the very end of the course descriptions designate the semester in which the course is usually offered and/or whether a course is offered only during day or evening hours.

F Fall Semester	O Occasionally or On Demand
W Winter Semester	if sufficient enrollment develops
S Spring/Summer Semester	

## Course Numbering System

All Delta College academic courses have a three-digit course number. The Schedule of Academic Classes booklet, which is published prior to each semester, lists courses in alphabetical order by subject area name according to these three-digit course numbers.

1. Courses within the 100-199 series generally represent freshman-level courses; however, these courses may also be taken by sophomores.
2. Courses within the 200-289 series are intended primarily for sophomores; however, these courses may be taken by freshmen having the necessary prerequisites.
3. Courses within the 290-299 series designate special courses as follows: 291 Independent Study (arranged on an individual basis between student and faculty member; see Independent Study Course Information, page 103); 292-299 Special Topics/Seminars (such courses will be offered as regular courses upon demand or to meet the special needs of some programs).

## Honors Course Sections

Honors courses will incorporate all regular course content with added emphasis on individual learning styles, the process of learning, and the creation of products. You will be involved in problem-solving, analyzing, synthesizing, and evaluating at a higher level of abstraction. You will be expected to be more self-directed with a goal of understanding the theoretical base of the subject matter. If you enroll in honors courses, you will receive an "H" on your transcript.



## Independent Study Course Information

Independent Study refers to enrollment in an appropriately-designed, variable-credit course for a specific plan of study, authorized and supervised by a consenting faculty member. Independent Study is not a substitute for regular courses, but an enrichment opportunity. Normally, it is a project designated to allow you to investigate an area of interest not within the scope of a regular course, to probe more in depth than is possible in a regular course, or to obtain an educational experience outside that normally offered by a regular course.

Guidelines for an Independent Study course are:

1. **Proposals:** The Independent Study project is normally student-initiated. Early interaction with faculty is essential in the development of a mutually-acceptable project description. At a minimum, such a description should contain an outline of the study topic, specification of the work to be done and the materials to be read, the credit to be given, the type and frequency of faculty-student contacts, and a statement of the evaluative criteria to be used by the faculty member.
2. **Approval Process:** The faculty member must accept and approve the project and then submit the agreed-upon proposal on the appropriate form to the Department Chair for approval. The granting of approval by the Department Chair may involve considerations, such as faculty workload, which go beyond the merits of the project. If the Chair approves, information copies of the form are then submitted to the Academic Dean and the Director of Records. The student may register for the project after the authorization form is received by the Director of Records.
3. **Responsibility:** Independent Study is basically a tutorial process, necessarily involving substantial faculty participation. Students are on their own when pursuing an Independent Study, because it involves no class meetings or formal lectures. The faculty member is the responsible custodian of the project, obliged to provide guidance, assistance, criticism, suggestion, and evaluation.
4. **Variable Credit:** With faculty approval, credit may vary from one to six credits.

## International Travel/Study Courses

Delta College offers international travel/study courses on an annual basis. These courses are usually offered for four credits which include a combination of lecture and field experience in group international travel; however, since the length of travel time may vary from one to four weeks, the Academic Council has approved variable credit, depending on the length of the travel field experience. Consequently, travel/study courses may vary in credits from a minimum of one to a maximum of four. These courses are numbered 268 and may be taken in various disciplines; i.e., BIO 268, ECN 268, SOC 268. The specific country/region of focus will be listed after the course number and title (SOC 268 International Studies: Australia). You may register for only one travel/study course per trip. You should consult a counselor regarding the transferability of total credits earned through international study and travel.

**Delta College reserves the right to alter, add, or delete course numbers, titles, credit hours, lecture and/or lab hours, and descriptions before expiration of this publication.**

**Non-degree credit courses offered by Community Services (Section III, Programs of Study, Non-Degree Programs and Activities) are described in their Community Services Schedule of Classes, which is published prior to the beginning of each semester.**

## Learning Community Courses

Learning community courses are courses in which:

1. Disciplines are taught together (for example, literature with history, calculus with physics, criminal justice with psychology) so that the connections between them are clear.
2. You can work with other students on activities and projects.
3. You can interact with other students and teachers and be part of a closely-knit, supportive community of learners.
4. You may experience a variety of learning modes such as participating in large and small group discussions, working on activities and projects, taking field trips, and hearing lectures.
5. Students and teachers work closely together, contributing what they already know and seeking new knowledge.
6. You get to express your thoughts and ideas and to hear those of your fellow students.
7. You can gain self-confidence about yourself as a student, a thinker, a reader, a writer, a speaker, a listener.

These courses combine at least two different disciplines or areas in order to show the connections between them. They are taught by at least two instructors, each from the different disciplines or areas included in the course.

Each semester, Delta College publishes a complete list of learning community courses in the Schedule of Academic Classes booklet.

## Telecourses

In addition to traditional teaching methods, Delta College offers telecourses each semester that make it possible to earn college credit in your home.

You need not come to Campus except for a few scheduled meetings (orientation, mid-semester evaluation, and final evaluation).

You may apply college credits earned through telecourses to an Associate degree program. In most cases, these credits will transfer to other colleges and universities.

If you are a veteran or on financial aid, you should check with your counselor prior to enrolling in a telecourse. Each semester, Delta College publishes a complete list of telecourse offerings in the Schedule of Academic Classes booklet and the Community Services Schedule of Classes.



# Academic Course Abbreviations

Courses in this section, as well as those in the Schedule of Academic Classes booklet published each semester, are listed in alphabetical order by department areas.

The subject area abbreviation appears on students' grade reports and official transcripts.

## Abbreviation ..... Department Area

ABS	Applied Behavioral Studies
ACC	Accounting
AFT	Aviation Flight Technology
AGM	Auto Service Education Program (ASEP)
AGR	Agricultural Enterprise
AIB	American Institute of Banking
ARC	Architectural Technology
ART	Art
AUT	Automotive Service
BIO	Biology
BRT	Broadcasting and Telecommunication
CAD	Computer Assisted Drafting
CD	Child Development
CED	Cooperative Education
CHM	Chemistry
CIS	Computer Information Systems
CJ	Criminal Justice
CNC	Computer Numerical Control
CPS	Computer Science
CRM	Credit Union Management
CT	Chemical Technology
DA	Dental Assisting
DH	Dental Hygiene
DRF	Drafting
ECN	Economics
ED	Education
EET	Electronic Engineering Technology
EGR	Engineering
EMT	Emergency Medical Technician
ENG	English
ENV	Environmental Science
EST	Electronic Service Technology
FM	Fashion Merchandising
FR	French
FST	Fire Science Technology
GAT	Graphic Arts Technology
GB	General Business
GE	German
GEO	Geography
GLG	Geology
HIS	History
HSC	Health Science
HSR	Human Services

## Abbreviation ..... Department Area

ID	Interior Design
IHC	In-Home Edu-Care
IHU	Interdisciplinary Humanities
IS	Industrial Supervision
LAS	Legal Assistant
LD	Dyslexic/Learning Disabled
LIT	Literature
MA	Medical Assistant
MFG	Manufacturing
MS	Machine Tool Operations
MT	Mechanical Technology
MTH	Mathematics
MUS	Music
NHA	Nursing Assistant/Home Health Aide
NUR	Nursing
OSE	Office Systems Education
PE	Physical Education Activity
PEH	Physical Education & Health Education Theory
PHL	Philosophy
PHO	Photography
PHY	Physics
PNE	Practical Nursing Education
POL	Political Science
PSC	Physical Science
PSY	Psychology
PTA	Physical Therapist Assistant
QA	Quality Assurance
RAD	Radiography
RC	Residential Construction
RE	Real Estate
RHA	Refrigerator/Heat & Air Conditioning
ROB	Robotics
RT	Respiratory Therapy
RUS	Russian
SA	Substance Abuse
SCI	Interdisciplinary Science
SFA	Surgical First Assistant
SK	Skilled Trades
SL	Sign Language
SOC	Sociology
SPA	Spanish
SPH	Speech
ST	Surgical Technology
WWT	Water/Wastewater
WELD	Welding

## An Employer's Opinion

*"Dow Corning's Auburn site looks to Delta College for technically skilled people to meet our work force needs. These individuals are not the typical off the street hires as Delta provides us with qualified, experienced candidates that meet our requirements and can compete in a World Class Environment!"*

Mr. Daniel Ratell, Personnel & Training Coordinator, Dow Corning Corporation-Auburn Site • Midland, MI



## Academic Courses

**Applied Behavioral Studies Courses ♦♦♦♦**

## 1 Sem Hr

Assists students acquire or improve their learning strategies which may increase their chance for success in their college course-work. Through the incorporation of motivational strategies and learning theories, students will be taught study techniques, test and note taking skills, time management methods; as well as how motivation, awareness of learning styles, and the use of support services can positively impact on a successful college experience. Credit may be earned in only one of the following: ABS 101, ABS 108 or ABS 292. (15-0)

## 1 Sem Hr

Develops skills in locating leads in the job market, writing resumes, cover letters, completing applications and interviewing. (15-0)

## 1 Sem Hr

A group seminar to help students discover and actualize their unique capabilities, strengths, talents, and abilities. The seminar will enable each student to learn about the variables that are important in making an occupational decision. (15-0) A

## 1 Sem Hr

A seminar class based on theories of social behavior analyzing the thoughts, ideas and assumptions that are part of the American socialization process. Students are introduced to the symbolic interactionist theories of James, Mead, Cooley, Goffman and others and how these theories explain the development of the social self. (15-0) A

## 1 Sem Hr

Prerequisite: ABS 104. A continuation of the study of the social self and the process of socialization as the development of a belief system through exploration of other social behavioral theorists (e.g., Glasser, Ellis, Perls, Mead, Benedict, Merton, Thomas). The focus is on how one's socialization can positively or negatively effect the results one experiences by their "self fulfilling prophecies" and their "definition of the situation." (15-0) FW

## 2 Sem Hrs

Assists students in obtaining skills critical to their college success. Demonstrates and practices strategies in test taking, note taking, memory, textbook reading, and critical and creative thinking. Explores life skills related to college success, such as personal responsibility; relationship building; health, money, time and stress management; and college resources. Students enrolled in or needing ENG 100, ENG 108, or ENG 109 are recommended to take ABS 292. Credit may be earned in only one of the following: ABS 101, ABS 108 or ABS 292. (30-0)

## 3 Sem Hrs

Students enrolled in or needing ENG 100, ENG 108, or ENG 109 are recommended to take ABS 292. Combines the goals of ABS 108 with additional time for special attention to individual student needs in study and life skills practice. Credit may be earned in only one of the following: ABS 101, ABS 108 or ABS 292. (30-30)

**ABS 290-299 Special Projects in Applied Behavioral Science O**

## Accounting Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

## 4 Sem Hrs

Basic accounting practices and procedures, including journalizing, posting, preparation of financial statements, special journals, subsidiary

ledgers, petty cash fund, bank reconciliation, and payroll accounting. Completion of a practice set is required. Transfer students should take ACC 211. Credit may only be earned in either ACC 111 or in 211 but not in both. (60-0) A

## 5 Sem Hrs

A practical course dealing with mastery of current tax law. Students apply their knowledge by constant completion of federal and state forms relating to such topics as deductions, credits, self-employment, farms, rentals, pensions and capital gains. H&R Block issues a Certificate of Accomplishment to students who average grades of 70% or more in the course. (75-0) FW

## 4 Sem Hrs

**Prerequisite:** MTH 107 or equivalent or concurrent enrollment. An introduction to the basic concepts of accounting principles. Includes the accounting cycle for service and merchandising businesses, internal control, accounting for accounts and notes receivable, inventories, long-term asset, current liabilities, payroll, and partnerships. Completion of a practice set is required. Credit may only be earned in either ACC 111 or in 211 but not in both. (60-15) A

## 4 Sem Hrs

**Prerequisite:** ACC 211 with a C (2.0) minimum grade. Includes a study of corporation basic theory and methodology, statement of cash flows, accounting for manufacturing operations, and accounting data as used in performance measurement, decision making, planning, and control. (60-15) A

## 4 Sem Hrs

**Prerequisite:** CIS 133 and ACC 111 or ACC 211. An introduction to microcomputer applications in general ledger, accounts receivable, accounts payable, payroll, and inventory/invoicing. Electronic spreadsheet applications will be developed using appropriate software. Outside laboratory assignments will be given. (60-0) FW

## 3 Sem Hrs

**Prerequisite:** ACC 212. Studies the Federal income tax law. Emphasis is placed on the application to the individual and the single proprietorship business, although some references are made to the corporation. Individual tax returns are prepared both manually and by computer. (45-0) FW

## 4 Sem Hrs

**Prerequisite:** ACC 212 with a C (2.0) minimum grade and ACC 214. Study of current assets and current liabilities. Includes journalizing, in-depth study of cash and internal control, receivables, current liabilities, error analysis, statement analysis, payroll taxes, and sales tax. Completion of three major projects is required. (60-0) F

## 4 Sem Hrs

Prerequisite: ACC 212 with a C (2.0) minimum grade and ACC 214. Study of long-term assets and equities. Includes journalizing, plant assets, depreciation, notes, stockholders' equity, time value of money, error analysis, statement analysis, and statement of cash flows. Completion of three major projects is required. (60-0) W

## 4 Sem Hrs

**Prerequisite:** ACC 212 with a C (2.0) minimum grade. Accounting processes, theory, and principles. Financial statement presentation, valuation of current assets, property plant and equipment, current liabilities and time value of money. Designed for Northwood University 3+1 students. (60-0) F Odd years only.

## 4 Sem Hrs

Prerequisite: ACC212 with a C (2.0) minimum grade. Equity accounting including stockholders equity, EPS, income taxes, pensions, leases,



accounting changes, revenue recognition, investments, financial statement analysis, long-term liabilities and statement of cash flows. Designed for Northwood University 3+1 students. (60-0) W Even years only.

**ACC 233 Cost Accounting 3 Sem Hrs**

Prerequisite: ACC 212 with a C (2.0) minimum grade. Relates principles and methods of handling materials, labor costs, and manufacturing expenses to the formulation of reports to management. Includes job order, process, standard, direct and budgetary costing procedures. (45-0) FW

**ACC 235 Financial Management 3 Sem Hrs**

Prerequisite: ACC 212 with a C (2.0) minimum. Study of the theoretical and conceptual framework for financial decision making. Role of the finance function and its relevance to business management is emphasized. Includes financial forecasting, leverage, current asset management, short-term financing, valuation of stocks and bonds, cost of capital, capital budgeting, and long-term financing techniques to maximize the value of the firm. (45-0) FW

**ACC 290-299 Special Projects in Accounting O**

## Aviation Flight Technology Courses ♦♦♦♦♦

**AFT 101 Private Pilot Ground Training 4 Sem Hrs**

Provides the basic principles of flight that are of concern to the private pilot with special emphasis on preparation to pass the Federal Aviation Administration (FAA) Private Pilot written exam. Includes Preflight facts, FAA regulations, meteorology, flight computer, navigation and radio navigation. (60-0) F

**AFT 105 Primary Pilot Flight Training I 2 Sem Hrs**

Prerequisite: Completion of or concurrent enrollment in AFT 101 and coordinator permission. Provides knowledge, skills and habit patterns for solo flight. Includes practice of airport operations, takeoffs and landings, and emergency procedures with work towards maximum performance standards. Emphasizes radio navigation and advanced ground reference maneuvers directed towards private pilot skill level. Special fees for flight instruction and aircraft rental must be paid by students. (0-50)

**AFT 106 Primary Pilot Flight Training II 3 Sem Hrs**

Prerequisite: AFT 105 with a "C" (2.0) minimum grade and coordinator permission. Provides information, knowledge, and skills so student may safely conduct solo - cross-country operations. Develops Pilot Proficiency in preparation for Private Pilot Practical Test. Special fees must be paid by student for flight instructor time and aircraft rental. (20-25)

**AFT 201 Instrument Pilot Ground Training 4 Sem Hrs**

Prerequisite: AFT 101 or equivalent and coordinator permission. Prepares students for Federal Aviation Administration Instrument-Rating-Airplane written examination leading to the addition of an instrument rating to a Private or Commercial Pilot certificate. Emphasizes airplane instruments, air traffic control, Federal Aviation regulations, instrument flight operations, enroute and approach charts and IFR trip planning and navigation. (60-0) W

**AFT 202 Aviation Meteorology 1 Sem Hr**

Prerequisite: GEO 103 with a "C" grade (2.0) minimum. Focuses on use of aviation weather services, electronic retrieval of weather related information and the National Weather Service Program. Emphasizes flight planning and the use of surface weather reports, radar reports, aviation forecasts, surface analyses, constant pressure charts and upper winds information. (15-0)

**AFT 210 Commercial Pilot Ground Training 4 Sem Hrs**

Prerequisites: AFT 101 with a "C" (2.0) grade minimum or equivalent and coordinator permission. Prepares students for the Federal Aviation Administration Commercial Pilot written examination leading to licensure of a commercial pilot by the Federal Aviation Administration. Covers applicable flight information publication, meteorology and weather, navigation, aerodynamics and principles of flight, and aircraft instruments. (60-0)

**AFT 215 Advanced Pilot Flight Training I 2 Sem Hrs**

Prerequisite: AFT 106 with a "C" (2.0) minimum grade, previous or concurrent enrollment in AFT 201 and coordinator permission. Provides student with foundation in attitude instrument flight and instrument navigation. Prepares student for introduction of Instrument Flight Rules (IFR) enroute procedures by performing instrument approaches and holding patterns. Special fees for flight instructor and aircraft rental will be paid by student. (30-26)

**AFT 216 Advanced Pilot Flight Training II 3 Sem Hrs**

Prerequisite: AFT 215 with a "C" (2.0) minimum grade and coordinator permission. Provides instruction in Instrument Flight Rules (IFR) enroute procedures to attain proficiency level of Instrument Rated Pilot. Provides the student who meets the flight time requirements of FAR (Federal Aviation Regulation 61.65) the qualifications to apply for F.A.A. Instrument Rating Practical Test. Special fees for flight instructor and aircraft rental will be paid by student. (25-20)

**AFT 217 Advanced Pilot Flight Training III 2 Sem Hrs**

Prerequisite: AFT 106 with a "C" (2.0) minimum grade and coordinator permission. Includes extensive review and practice in Visual Flight Rules (VFR) cross-country procedures. Develops night orientation, night cross-country procedures, complex airplane operations and precision flight maneuvers to Commercial Pilot standards. Special fees for flight instructor and aircraft rental will be paid by student. (35-34)

**AFT 218 Advanced Pilot Flight Training IV 3 Sem Hrs**

Prerequisite: AFT 217 with a "C" (2.0) minimum grade and coordinator permission. Provides extensive review and preparation for Federal Aviation Administration Commercial Practical Test. Emphasizes both the Instrument and Commercial Flight Test Oral Preparation Briefings. Special fees for flight instructor and aircraft rental must be paid by student. (25-25)

**AFT 290-299 Special Projects in Aviation O**

## Auto Service Education Program (ASEP) Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

**AGM 160 Minor Vehicle Service 2 Sem Hrs**

An Introduction to the components and operating principles of the automobile. Emphasis is placed upon job orientation, safe work habits, and the opportunity to learn accurate and accepted methods in the performance of minor services. (10-30)

**AGM 162 Engine Service 5 Sem Hrs**

Prerequisite: GM Dealership sponsor or GM Apprentice. Emphasizes engine servicing, necessary for engine repair and maintenance. Includes the design, construction, and operation of gasoline and diesel engines. Credit may be earned in AGM 162 or SKGM 162 but not both. (35-105) F

**AGM 167 Air Conditioning 2 Sem Hrs**

Prerequisite: AGM 183. Studies nomenclature, theory of operation, system diagnosis, and methods of service with emphasis on use of tools and equipment necessary to determine malfunctions, service components, and place unit back in service. (21-21) S

**AGM 170 Dealership Work Experience I 1 Sem Hr**

Prerequisite: GM Dealership sponsor and AGM 160,162. A 400 hour internship emphasizing skills derived through on-the-job experience at the sponsoring dealership. (0-400)

**AGM 183 Specialized Electronics Training 4 Sem Hrs**

Provides the beginning technician with skills necessary for competent electrical fault isolation, system diagnosis, and repair. Credit may be earned in AGM 183 or SKGM 183 but not both. (60-12) F

**AGM 187 Electronic Engine Controls/Driveability 9 Sem Hrs**

Prerequisites: AGM 162/SKGM 162. Studies complete emission systems, fuel delivery functions, fuel injection, electronic ignition systems, engine tuneup and drivability. Emphasizes computerized engine control, and the use of accurate and complete methods in the diagnosis of engine performance complaints. Credit may be earned in AGM 187 or SKGM 187 but not both. (60 - 180) W



**AGM 190 Dealership Work Experience II** 1 Sem Hr  
Prerequisite: GM Dealership sponsor and AGM 170. A 360 hour internship emphasizing skill derived through on-the-job experiences with the sponsoring dealership. (0-360)

**AGM 260 Suspension Systems** 5 Sem Hrs  
Prerequisites: GM Dealership Sponsor and AGM 162 or SKGM 162. Studies the nomenclature and operating principles of steering and suspension systems. Includes wheel alignment geometry, adjustment methods, and operation of alignment equipment with emphasis placed on methods of adjustment and repair necessary for quality steering and suspension service. Credit may be earned in AGM 260 or SKGM 260 but not both. (32-112) F

**AGM 265 Applied Body Electrical** 2 Sem Hrs  
Prerequisite: AGM 183. Studies Automotive Electronics as it pertains to Automotive Accessory circuits. Emphasizes diagnosis of malfunctions within electrical and convenience circuits with emphasis on using Strategy Based Diagnostics. (24-24) F

**AGM 270 Dealership Work Experience III** 1 Sem Hr  
Prerequisite: AGM 190 or 170. A 400 hour internship emphasizing skills derived through on-the-job experiences with the sponsoring dealership. (0-400)

**AGM 272 Automatic/Electronic Transmissions** 8 Sem Hrs  
Prerequisites: AGM 162 or SKGM 162. Studies the functional service skills for automatic transmissions and transaxles including nomenclature, fundamentals of operation, and diagnosis of malfunctions and electronic controls. Emphasizes use of special tools and equipment necessary in diagnosis and repair. Credit may be earned in AGM 272 or SKGM 272 but not both. (64-144) W

**AGM 280 Dealership Work Experience IV** 1 Sem Hr  
Prerequisite: AGM 270 or 190. A 600 hour internship emphasizing skills derived through on-the-job experiences with the sponsoring dealership. (0-600)

**AGM 284 Brake Systems** 4 Sem Hrs  
Prerequisites: AGM 160 & 162 or SKGM 160 & SKGM 162. Studies service methods by understanding the nomenclature and operating principles of the hydraulic and mechanical systems of shoe and disc brake assemblies. Includes Anti-lock Brake, and Traction Control Systems with emphasis on repair procedures on brake system components necessary for quality and safe brake system servicing. Credit may be earned in AGM 284 or SKGM 284 but not in both. (25-75) S

**AGM 286 Drivelines and Manual Transmissions** 3 Sem Hrs  
Prerequisites: AGM 162 or SKGM 162. Studies nomenclature, fundamentals of operation, and diagnosis of malfunctions with emphasis on service operations of clutches, standard transmissions, standard transaxles, driveshafts, driveaxles, and differentials. Credit may be earned in AGM 286 or SKGM 286 but not both. (15-45) S

**AGM 287 Customer Service Advising** 2 Sem Hrs  
Prerequisite: GM Dealership sponsor and AGM 160, 162. Studies the arrangement, managerial structure, and operational characteristics of the service floor of an automotive service facility. Includes the opportunity to learn the basic concepts necessary for success as a professional service advisor through units of instruction oriented towards customer interviewing, service merchandising, warranty interpretation, and repair service scheduling. (30-0) F

**AGM 288 Dealership Work Experience V** 1 Sem Hr  
Prerequisite: AGM 280 or 270. A 400 hour internship emphasizing skills derived through on-the-job experiences with the sponsoring dealership. (0-400)

## Agricultural Enterprise Courses ♦♦♦♦♦♦♦♦

**AGR 140 Farm Business Management** 2 Sem Hrs  
Basic principles of planning and management of land, labor, crops, livestock, equipment and buildings to insure a successful farming business. (30-0)

**AGR 150 Agricultural Computer I** 2 Sem Hrs  
Provides the farm record keeper of agribusiness manager a familiarity with the use of a personal computer for business operations. Emphasis is on developing basic skills on the MS-DOS system. A firm accounting package and several other farm programs are covered. (30-0) WS

**AGR 151 Agricultural Computing II** 2 Sem Hrs  
Prerequisite: AGR 150 or PC Familiarity. Provides the farm record keeper or agribusiness manager skill in the use of a personal computer for business decisions. Applications are extended to the use of a spreadsheet, data filer, and farm record keeping. Programs specific to class needs are emphasized. (30-0) WS

**AGR 160 Agribusiness Management** 3 Sem Hrs  
Provides a working knowledge of the agribusiness system including input supplies, production agriculture, marketing and processing. Intended for agribusiness professionals providing service to the production (farming) sector of agriculture. (30-0)

**AGR 185 Plant Science I** 2 Sem Hrs  
Students will develop a working knowledge of plant growth through the study of basic concepts and terminology unique to plants. Using lecture and greenhouse laboratory experiences, plant reproduction, growth factors, cell structure and classifications will be explored. (20-15) O

**AGR 186 Plant Science II** 2 Sem Hrs  
Prerequisite: AGR 185 or permission of instructor. Students will develop a working knowledge of plant functions through the study of basic concepts and terminology unique to plants. Using lecture and greenhouse laboratory experiences, genetics, translocation, photosynthesis, respiration and symbiosis will be explored. (20-15) O

**AGR 187 Plant Science III** 2 Sem Hrs  
Prerequisite: AGR 186 or permission of instructor. Students will develop a working knowledge of plant management through the study of basic concepts and terminology unique to plants. Using lecture and greenhouse laboratory experiences, nutrient requirements, plant pests, soil tilth, and pest management will be explored. (20-15) O

**AGR 190 Equine Management** 2 Sem Hrs  
Introductory course in the basic principles of horse care and management. Topics include selecting a horse, tack, breeds, nutrition, handling, equipment, grooming, care, safety, illnesses, first aid, showing, riding techniques, breeding and facility construction. Satisfies needs of prospective horse owners, the recreational rider or those interested in a career in equine science/management. Credit may be earned in AGR 190 or PEH 190 but not in both. Fee required. (30-0) O

**AGR 205 Agricultural Marketing I: Domestic & Global** 3 Sem Hrs  
A study of marketing agricultural commodities. Covers bankers' view points, hedging, world markets, Michigan markets, niche marketing, weather and the role it plays, and other marketing alternatives. Course concludes with a trip to Chicago Board of Trade to watch the market work first hand. (45-0) WE

**AGR 206 Agricultural Marketing II: Domestic and Global** 3 Sem Hrs  
Prerequisite: AGR 205. More in-depth study of commodities marketing. Helps plan strategies and alternatives to the common marketing practices. Emphasis on national policies and foreign country agricultural economies. Optional trip to USDA, Washington, D.C. (45-0) WE

**AGR 208 Futures Market/Technical Analysis** 1 Sem Hr  
Prerequisite: AGR 205 or instructor's permission. The study of market action using mathematical and chart displays for the purpose of forecasting price trends. Includes chart interpretation, moving averages, and computer programs in evaluation of futures market direction. (16-0) WE

**AGR 210 Agricultural Finance** 3 Sem Hrs  
Provides the farmer or agribusiness manager the basic finance and accounting skills to operate a farm business. Upon completion of the course participants know how to put together information needed to obtain financing and keep records to accurately assess their financial implications of expansion of the farm business and other areas which will directly and indirectly affect the financial statement. (45-0) WE



## 2 Sem Hrs

Prepares farmers and agribusiness owners for better dealing with the legal aspects of interactions with banks, other agribusinesses, lawyers, the courts, and the government. Topics covered are wills and estates, lending, liens, bankruptcy and restructuring, farm worker laws, contracts and transactions, and an introduction to the court system. (30-0)

**2 Sem Hrs**

The laws and regulations pertaining to environmental issues in agriculture are interpreted for farmers and agribusiness leaders. Technical information is provided on pesticide effects in the environment and water quality. Legal defenses for farmers are discussed, as are improved cultural practices, and health and safety tips. Experts from the DNR and the MDA will provide opinions. (30-0) O

## 2 Sem Hrs

Emphasizes physical and chemical properties of soil, soil formation and classification, and survey of essential plant nutrients and their availability in soils. Both theoretical and practical aspects of soil fertility are studied. Farmers and nurserymen can relate topics of soil testing/interpretation and uses of appropriate types and amount of fertilizer to maximize long-term soil productivity. (30-0) Q

## 2 Sem Hrs

Prerequisite: CHM 101 or 111. Physical and chemical properties of soil, soil formation and classification, and survey of essential plant nutrients and their availability in soils. Both theoretical and practical aspects of soil fertility are studied. Special project required. (30-0) O

## 1 Sem Hr

Issues affecting the dry bean and sugar beet industries are presented in lectures and debated by experts. Field trips are used to observe the food marketing system from grower to grocery. (15-0) O

## 3 Sem Hrs

Identification, culture and uses of important native and introduced trees, both shade and ornamental, found in Michigan. Familiarity of common problems associated with the plants and awareness of recommended cultivars are included. Field trips to local nurseries and parks provide living plant observation. (30-30) FE

## 3 Sem Hrs

Prerequisite: AGR 240. Identification, culture and used of important native and introduced shrubs and vines found in Michigan. Familiarity of common problems associated with the plants and awareness of recommended cultivars are included. Field trips to local nurseries and parks provide living plant observation. (30-30) WE

## 3 Sem Hrs

**Prerequisite:** AGR 241. A comprehensive understanding of plant functions as well as cultural and horticultural practices as they relate to trees. Common tree insect and disease pests, along with physiological problems are addressed. (30-30) FE

**American Institute of  
Banking Courses ♦♦♦**

## 2 Sem Hrs

Focus on the commercial lending process and the skills loan officers need to service corporate clients. Course content will include the loan application process from application to collection, resolving loan problems, regulatory forces and legal structures that affect commercial lending, and developing a bank's commercial loan portfolio. (30-0) O

## 3 Sem Hrs

Prerequisite: American Institute of Banking student or permission of instructor. Includes journalizing, posting, preparation of worksheets and financial statements, recording of uncollectible receivable, and inventory valuation methods. Completion of a practice set is required. Credit will not be granted to students who have received credit for ACC 111 or 211. May not be used as a substitute for ACC 111-211. (45-0) O

## 3 Sem Hrs

Prerequisite: AIB 103. Designed specifically for students in the American Institute of Banking program. Includes depreciation methods, internal control, concepts and principles, partnerships, corporations, analysis of financial statements, and the preparation of a practice set. (45-0) O

## 2 Sem Hrs

**Prerequisite:** AIB 103. Designed specifically for students in the American Institute of Banking program. The course offers the student tools and techniques necessary for the evaluation of financial condition and operating performance of a modern business enterprise. The course is divided into four parts: Financial Statement Analysis and Accounting; Financial Statements and Business Funds Flow; Tools of Financial Statement Analysis; and The Technique of Financial Statement Analysis. The last part is subdivided into five modules, covering short-term liquidity and solvency, funds flow analysis, analysis of operations, long-term financial strength, and asset utilization. Credit will not be granted to students who have earned credit in ACC 212. (30-0) O

## 3 Sem Hrs

Designed specifically for students in the American Institute of Banking program. Offers the student tools and techniques necessary for the evaluation of Branch Management Function. The course is divided into three areas: lending, focusing on legislation and rules of lending; management, theories and techniques; and operations, basic procedures and operational guidelines affecting tellers and customers. (45-0) O

## 3 Sem Hrs

Designed specifically for students in the AIB program. Offers the student tools and techniques necessary for evaluation of commercial business situations and their effect on maximum banking profit. The course is divided into three areas: present banking environment, business situations related to the bank and operational guidelines affecting management policy. (45-0) O

## 1 Sem Hr

**Prerequisites:** Basic Accounting or instructor permission. Financial statement analysis will be studied by conducting trend, ratio and comparative statement analysis, evaluating pro formas and cash budgets, as well as analyzing a workout situation by using several types of commercial loans. (15-0) 0

## 1 Sem Hr

Introduction to mortgage lending including loan processing and underwriting. Conducting a loan interview, processing a loan, acting on a loan decision, closing the loan, servicing the mortgage and preparing the necessary underwriting and documentation will be presented. (15-0) 0

## 2 Sem Hrs

Six human relations skills that encourage smooth, clear and personal communication between the bank and the customer will be identified and practiced, as well as the basic steps in selling the variety of bank products available and how to describe the bank's products and services in a customer-focused framework. (30-0) 0

## 3 Sem Hrs

This course is designed to provide bankers in the field a broad overview of the nature of bank investment activities. The what and why of investments are stressed rather than the how, or the specific techniques by which the objectives are reached in each bank. (45-0) O

## 3 Sem Hrs

This course is designed to provide bankers in the field a broad overview of the nature of how the general law affects bankers and their transactions. The what and why of law are stressed rather than the how or the specific techniques by which the objectives are reached in each bank. (45-0) Q

## 3 Sem Hrs

This course is designed to provide bankers in the field a broad overview of the nature of real estate financing activities. The what and how of real estate financing are stress rather than the how, or specific techniques by which the objectives are reached in each bank. (45-0) O



## Architectural Technology Courses ♦♦♦♦♦

**AIB 126 AIB Savings and Time Deposit Banking 3 Sem Hrs**  
Designed specifically for students in the American Institute of Banking Program. Acquaints the student with the impact of banking deregulation, growth of money market funds, and competition from non-bank organizations with emphasis placed on deposit instruments rather than on deposit operations. (45-0) O

**AIB 160 Principles of Bank Operations 3 Sem Hrs**  
This course is designed to provide for beginners and newcomers in the banking field a broad overview of the nature of commercial banking activities. The what and why of banking are stressed rather than the how, or the specific techniques by which the objectives are reached. (45-0) O

**AIB 166 Money and Banking 3 Sem Hrs**  
Provides a working knowledge of the various integral parts of the American Banking System. The impact of the Federal Reserve System and current economic factors on interest rates, yields, price levels, and the growth of money supply are presented in detail. Basic monetary theory needed by banking employees is emphasized in this course designed to meet the needs of the American Institute of Banking program. (45-0) FE

**AIB 170 Trust Functions and Services 3 Sem Hrs**  
This course is a study of the many banking trust service responsibilities. It points out that each of the 50 states have procedural variations, preference for certain trust services, and operational differences. It keeps clear the distinction between business and legal aspects of trust functions. (45-0)

**AIB 171 Credit Administration 3 Sem Hrs**  
Prerequisite: AIB 160. This course is designed for persons following the Finance and Banking Program. It prepares persons to properly handle loans and discounts in financial institutions. Students will study the many factors to be considered when formulating and administering a sound loan policy. (45-0) O

**AIB 172 Bank Credit Cards 2 Sem Hrs**  
Prerequisite: AIB 160. This course is designed for persons following the Finance and Banking Program. The course is structured so that the student will gain an overall perspective of the role of the bank credit card in the American economy. The student will also be made aware of the basic operational problems involved in the successful management of a bank card plan. (30-0) O

**AIB 173 Consumer Lending 3 Sem Hrs**  
Prerequisite: AIB 160. Designed for persons following the Finance and Banking Program. This course presents the techniques of bank installment lending. Emphasis is placed on establishing the credit, obtaining and checking information, servicing the loan, and collecting the amounts due. Other topics presented are inventing financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. (45-0) F

**AIB 175 Financial Planning for Bankers 2 Sem Hrs**  
Provides an overview of financial planning concepts and issues, applications of concepts to personal financial planning decisions, with special emphasis on employee roles in financial planning for consumers. (30-0) O

**AIB 184 AIB Marketing for Bankers 3 Sem Hrs**  
Designed specifically for students in the American Institute of Banking Program. Students should acquire a thorough understanding of basic marketing principles and theory and their practical application to the banking industry. (45-0) O

**AIB 185 Customer Service for Bank Personnel 1 Sem Hr**  
Develops better communication skills to enable employees to relate more effectively with customers and other bank personnel. Presents effective ways of establishing customer contact, exploring needs and defining and resolving problems. (15-0) O

**AIB 187 AIB Collectors Training 1 Sem Hr**  
Designed specifically for students in the American Institute of Banking Program. Emphasis is placed on the financial relations aspect as a means to collect delinquent loans while aiding the banker in complying with the Fair Debt Collection Practices Act. (15-0) O

**AIB 290-299 Special Projects in American Institute of Banking O**

**ARC 101 Materials and Methods of Construction 3 Sem Hrs**  
Introduction to basic construction materials; properties, recommended use, space requirements, methods of finishing, building code implications, and energy conservation applications. Credit may be earned in ARC 101 or RC 102 but not in both. (45-0) FD

**ARC 105 Architectural Drafting I 4 Sem Hrs**  
Fundamentals of architectural drafting including linework emphasis, lettering design, symbol applications, multiview projections relative to architectural drawings, one point perspective, two point perspective, graphic design elements, and presentation of floor plans, sections and elevations. Study of space requirements and method or representing basic residential elements. Introduction of CAD including demonstrations and basic procedures. Credit may be earned in ARC 105 or RC 109 but not in both. (45-45) FD

**ARC 106 Architectural Drafting II 4 Sem Hrs**  
Prerequisite: ARC 105 or permission of instructor. Introduction to construction drawing organization. Development of coordinated drawings for one small building with emphasis on application of notes, dimensions, and development of graphic skills. Includes a study of CAD techniques and the use of the computer for drawing production, storage and retrieval, development of selected architectural details relating to foundation, floor, wall, and roof assemblies, with emphasis on energy conservation. (45-45) W

**ARC 107 Architectural Computer and CAD Applications 3 Sem Hrs**  
Prerequisite: ARC 110 or CAD 114. Introduction to CAD using the micro and mainframe computer. Demonstrations and basic skill development in areas of menu driven software including light pen techniques, graphics tablets and keyboard input devices for drawing composition, storage and retrieval. Demonstration and use of spreadsheet, data base, and word processing software to aid in construction documentation and production. A study of selected commercial graphics software and BASIC graphics programming techniques. (45-0) FD

**ARC 110 CAD System Orientation 2 Sem Hrs**  
Prerequisite: ARC 105 or concurrently. An introduction to the lab, policy, procedures, software (Autocad), and hardware. Basic terminology and specific knowledge of software. Menu topics include point, line, arc/circle, file/terminate, data base management, entity control. Emphasis is placed on architectural designs. (30-0) FD

**ARC 111 Mechanical and Electrical Systems for Buildings 3 Sem Hrs**  
Fundamentals and operating principles of air conditioning, plumbing, and electrical systems; including typical layout, calculations, sizing, and methods of installation. Credit may be earned in ARC 111 or RC 206 but not in both. (45-0) WD

**ARC 140 Introduction to Landscape Architecture 3 Sem Hrs**  
Designed to acquaint students with principles, techniques, process and materials used in landscape architecture technology. Covers planting and residential design, terminology, cost estimates, construction methods and use of plant. (45-0) O

**ARC 200 Spatial Analysis and Presentation 3 Sem Hrs**  
Emphasis will be placed on the reading of "blueprints" from the viewpoint of the interior designer. The student will analyze and plan appropriate spatial arrangement given intended use, relationship to adjacent space and accepted standards; do basic drawing and presentations and present drawings of floor spans, interior elevations, and interior perspectives. Credit may be earned in ARC 200 or ID 200 but not in both. (45-0) WD

**ARC 204 Estimating Building Construction 3 Sem Hrs**  
Principles of calculating quantities of material and costs of material and labor of building construction. Use of data base, word processing, and spreadsheet software and BASIC programming techniques to calculate and record estimate records. Reference to specifications, drawings, contracts, and the procedures used to arrive at building estimates. Methods of cost control during construction. Credit may be earned in ARC 204 or RC 202 but not in both. (45-0) WD







**ART 218 Painting II** 3 Sem Hrs  
Prerequisite: ART 217. A continuation of the painting experience on a more advanced level. Major emphasis on developing a more personal painting style and an understanding of the artist's role in the arts today. (0-90) O

**ART 219 Watercolors** 3 Sem Hrs  
Students will explore traditional and non-traditional approaches to the watercolor medium as well as representational and abstract imagery. Work will be developed in the studio and out of doors. (0-90)

**ART 221 Graphic Design/Commercial Art** 3 Sem Hrs  
Recommended prerequisite: ART 115. Provides basic experience in graphic design. The focus will be on designing with typography as well as developing an understanding of its history and vocabulary. Aesthetics as applied to the printed page, concept development and design methodology will be addressed in assignments. Studio and lecture. (0-90) W

**ART 222 Sculpture** 3 Sem Hrs  
Prerequisite: ART 115 or 116 or permission of instructor. An introduction to a variety of sculptural concepts and techniques utilizing a variety of media. (0-90) O

**ART 231 Ceramics I** 3 Sem Hrs  
Introductory study of clay, glazes, and their applications, and techniques of wheel and hand construction through the process of low temperature Raku firing. Course fee required. (0-90) FW

**ART 232 Ceramics II** 3 Sem Hrs  
Prerequisite: ART 231 or permission of instructor. Ceramics II uses high-fire stoneware clay bodies and introduces firing techniques with high fire glazes. The techniques learned in Ceramics I are employed and are expanded to create a variety of well developed utilitarian and sculptural forms. Course fee required. (0-90) FW

**ART 233 Ceramics III** 3 Sem Hrs  
Prerequisite: ART 232 or permission of instructor. Learning by experimentation: mix own clay bodies and glazes rather than using prepared materials. Develop an understanding of ceramic process and employ this knowledge to gain a much higher level of achievement in ceramics. Course fee required. (0-90) FW

**ART 251 History of Architecture** 2 Sem Hrs  
The historical development of architecture as a major art form. This development is viewed in relation to man's knowledge of building techniques and available materials as affected by geographic, economic, political and religious influences. Formerly ART 153. (30-0) W

**ART 252 History of American Architecture** 2 Sem Hrs  
A study of the emergence and development of contemporary architecture from mid-18th century until the present, with an emphasis on the architecture of the United States. (30-0) O

**ART 255 Art of the 20th Century** 3 Sem Hrs  
An exploration of the visual arts of our century, with an emphasis on the current arts in America. (45-0) O

**ART 258 History of American Art** 3 Sem Hrs  
A study of the emergence and development of the visual arts in America from the 18th century until the present, with emphasis on the Art of painting. The works of the Hudson River School, the Luminist Movement, the Expatriates, the Eight and the Ashcan School through the Abstract Expressionists of the 50's, the pop artists of the 60's and the post-modern movements of the 70's will be examined. (45-0) O

**ART 259 History of Photography** 3 Sem Hrs  
Historical study of the evolution of technical processes and artistic concerns of the photographic media, and their impact on 20th Century society. (45-0) O

**ART 260 The Business of Art** 3 Sem Hrs  
Designed to acquaint the professional artist or advanced hobbyist with current business realities of art. Topics included are: self-promotion and marketing, grants, gallery contracts, networks, professional aspects, self-evaluation, career goal setting, tax and legal considerations. Journal, visits to galleries required. (45-0) O

**ART 269 Fundamentals of Jewelry Making** 3 Sem Hrs  
Designed to present jewelry as a form of personal art expression. Emphasis will be on design, fundamental materials, tools, and processes of jewelry making. Techniques will include cutting, fabricating, soldering, refining, casting, and finishing. (14-75) O

**ART 270 Photography for Artists** 3 Sem Hrs  
Prerequisite: Permission of the instructor. Designed primarily for art students to acquaint them with photography in relationship to their needs. The camera is studied as a practical resource/inspiration for mixed media, and its uses as sketchbook, tool for documentation. (36-45) W

**ART 271 Digital Imaging: Photo-Shop** 3 Sem Hrs  
ART 115 or PHO 101 recommended. Presents technical aspects/ skills of Adobe-Macintosh software with an arts emphasis toward developing aesthetic awareness. Explores photo manipulation, retouching, multiple layering, combining images with text, black and white and color images, scanning techniques, CD-ROM and other methods of storage and output. (45-0) O

**ART 272 Computer Graphics/Freehand I** 3 Sem Hrs  
Presents Macintosh-Aldus Freehand computer software: all tool-box tools, commands, color palette for application to graphic design projects involving typography, color, various fill patterns and color treatments, line types and layers, hand-drawn images via Wacom pressure sensitive pad. Import of images, and printing of color and black-and-white images. (45-0)

**ART 275 Computer Graphics** 3 Sem Hrs  
Prerequisites: ART 271 or GAT 226. Builds on previous Macintosh computer software and application skills to solve specific design problems. Uses combinations of several application software programs (drawing, painting, three - dimension) to achieve multiple effects with type and images on/for the printed page. Credit may be earned in ART 275 or GAT 230 but not in both. (45-0)

**ART 280 Printmaking** 3 Sem Hrs  
Prerequisite: ART 111 and 115. A study of the art of printmaking and its major techniques; with studio practice in a variety of printing methods. The techniques taught are basically art skills useful to artists. (0-90) O

**ART 281 Silkscreen Printing** 3 Sem Hrs  
Prerequisite: ART 111 and 115. The student will identify and use methods of screen preparation using water soluble film, paper stencils, direct painting, glue resist and photo transfers. (0-90) O

**ART 289 Advanced Studio Projects** 3 Sem Hrs  
Prerequisite: Designed for advanced students who have completed all coursework in their discipline. Emphasizes group collaboration in a studio environment across several art disciplines. Focuses on the added-value elements that result from interaction in a community of advanced artists sharing views, perspectives, on differing media. Requires completion of individually agreed-to project and participation in planning and arranging/ staging a group exhibition. (45-0) O

**ART 290-299 Special Projects in Art**  
See also Photography courses. O

## Automotive Service Courses ◆◆◆◆◆◆◆◆◆◆

**AUT 100 Introduction to Automotive Service** 3 Sem Hrs  
Units of instruction will emphasize orientation to the Automotive Service Units facility, basic tools and equipment, service publications, safety practices and professionalism. An introduction to the automobile and its components will concentrate on terminology and general component operation. (30-25) A

**AUT 101 Understanding Your Automobile** 2 Sem Hrs  
Intended to help you keep your car, van, or light truck in good operating condition. Topics include: the owner's manual, regular maintenance, emergency repairs, buying a new/used vehicle, or parts, selecting a repair facility, recognizing trouble signals, driving techniques, and the Michigan law for consumers and repair facilities. Not for auto majors. (30-0) FW



**AUT 108 Introductory Automotive Electronics 3 Sem Hrs**  
Studies automotive electrical and electronic fundamentals, magnetism, and electrical test equipment, terminology, operation, and diagnosis. Develops skills in establishing an electrical base for advanced electrical/electronic courses and in controlled learning experiences with basic electricity and electronics using meters and test equipment. (35-25)FW

**AUT 110 Automotive Electronics I 4 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies electrical test equipment, battery, wiring diagram, starting and charging system terminology, operation, and diagnosis. Develops skills in diagnosis of battery, diagnosis and repair of starting and charging systems and application of wiring diagrams. (40-40)FW

**AUT 112 Engine Service 6 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies automotive gasoline engines, terminology, operation, and diagnosis. Develops skills in controlled learning experiences on laboratory engine assemblies. (45-75)FW

**AUT 114 Brake System Service 5 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies drum, disc, hydraulic, power assist, antilock terminology, operation, and diagnosis. Develops skills on drum, disc, hydraulic, power assist, and antilock brake systems. (40-60)FW

**AUT 114B Disc Brake Systems 1.5 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies disc brake system terminology, operation and diagnosis. Develops skills in the front and rear wheel disc brake systems and lathe use. (12-18)0

**AUT 114C Hydraulic/Power Assist 1 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies hydraulic and power assisted brake terminology, operation, and diagnosis. Develops skills in the Pascal's Law, master cylinders, brake lines/hoses, electrical circuitry, valving and bleeding techniques for the hydraulics area. Skill development will also occur on vacuum, hydraulic, and electric power assisted units. (8-12)0

**AUT 114D Anti-Lock Brakes 1 Sem Hrs**  
Prerequisites: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies anti-lock brake terminology, operation, and diagnosis. Develops skills in car and light truck systems. A review will occur on electronics basics and use of electrical and hydraulic equipment to service these systems. (8-12)0

**AUT 120 Driveline Service 6 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck clutch, manual transmission, driveshaft, differential, transaxle, front driving axle, and transfer case terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment, and repair of clutches, manual transmissions, driveshafts, differentials, transaxles, front driving axles, and transfer cases. (60-60) cases. (60-60) FD

**AUT 120A Clutch Service .80 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck clutch terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment and replacement of clutch system components. (8-7)0

**AUT 120B Manual Transmission/Transaxle Service 1.5 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck manual transmission/transaxle terminology, operation, and diagnosis. Develops skills in the diagnosis, disassembly, inspection, replacement of parts, and reassembly of manual transmissions and transaxles. (15-15)0

**AUT 120C Rear Axle/Differential Service 2 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck rear axle terminology, operation, and diagnosis. Develops skills in the diagnosis, disassembly, inspection, replacement of parts, set up, and reassembly of rear axles/differentials. (20-20)0

**AUT 120D Front Wheel & Four Wheel Drive Service 1.7 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies cruise control terminology, operation, and diagnosis. Develops skills in the Ford, GM, Chrysler cruise control systems and wiring diagram application. (6-6)0

**AUT 122 Automatic Transmission Service 8 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck automatic transmission terminology, operation, and diagnosis. Develops skills in diagnosis, adjustment, and repair of passenger car and light truck rear wheel drive and front wheel drive automatic transmissions. (80-100)FW

**AUT 210 Automotive Electronics II 3 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies body wiring diagrams, vacuum circuit diagrams, operation and location of electrical and vacuum devices. Develops skills in the diagnosis of malfunctions within accessory and convenience circuits. (30-30)0 circuits. (30-30) WD

**AUT 210A Airbags/Steering Columns .60 Sem Hrs**  
Prerequisites: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies air bag and steering column terminology, operation, and diagnosis. Develops skills in the introduction to air bag systems, safety in handling, and steering column service. (6-6)0

**AUT 210B Power Door Locks And Windows .60 Sem Hrs**  
Prerequisites: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies power door locks, window terminology, operation, and diagnosis. Develops skills in the wiring diagram use to service power door lock and window systems. (6-6)0

**AUT 210C Instruments/Lighting .6 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies dash instruments and exterior lighting terminology, operation, and diagnosis. Develops skills in the instrument panel circuit operation, wiring diagram application, and headlight, taillight, turn signal, and stop lamps. (6-6)0

**AUT 210D Cruise Control .6 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies cruise control terminology, operation, and diagnosis. Develops skills in the Ford, GM, Chrysler cruise control systems and wiring diagram application. (6-6)0

**AUT 210E Wiper Systems .6 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies windshield wiper system terminology, operation, and diagnosis. Develops skills in the wiring diagram application on Ford, GM, and Chrysler systems and service. (6-6)0

**AUT 212 Suspension System Service 7 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Units of instruction will emphasize nomenclature, operation diagnosis of the steering and suspension system. Skill development is established through controlled learning experiences with frame, unibody, steering, suspension, four-wheel drives and four-wheel alignment. (56-84) WD

**AUT 212A Frame, Linkage, and Manual Gears 2 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies frame/unibody, linkage, manual gear terminology, operation, and diagnosis. Develops skills in the vehicle frame and unibody basics, steering linkage part servicing, recirculating ball, and rack and pinion manual steering gear service. (16-24)0

**AUT 212B Suspension Systems and Alignment 4 Sem Hrs**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies suspension systems and alignment terminology, operation, and diagnosis. Develops skills in the servicing of all component parts of current suspension systems plus two and four wheel alignment methods using the latest equipment available. (32-48)0

**AUT 212C Power Gears/Electronics 1 Sem Hr**  
Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies frame, steering, and suspension system terminology, operation, and diagnosis. Develops skills in frame, unibody, steering, suspension, four wheel drive and four wheel alignment. (56-84)0



**5 Sem Hrs**

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck heating and air conditioning terminology, operation and diagnosis. Develops skills in diagnosis and repair of the heating and air conditioning system components. (50-50)FW

2 Sem Hrs

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger and light truck heating system and engine cooling system terminology, operation, and diagnosis. Develops skills in the diagnosis and repair of heating system components and engine cooling system components. (15-15)0

3 Sem Hrs

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies passenger car and light truck air conditioning system terminology, operation, and diagnosis. Develops skills in the diagnosis and repair of air conditioning components and use of environmentally safe equipment. (35-35)0

**2 Sem Hrs**

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies and reviews the fundamentals of electricity and magnetism, terminology, operation, and diagnosis. Develops skills in electronics followed by exploring the various strategies of electronic engine control. (16-24)FW

**6 Sem Hrs**

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies units of instruction necessary to develop a thorough understanding of induction systems, carburetion, and injection systems. Develops skills through controlled learning experiences with fuel delivery systems, carburetion, and fuel injection systems. (58-72)FW

1 Sem Hr

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies carburetor and throttle body fuel injection unit repair terminology, operation, and diagnosis. Develops skill in the disassembly-inspection-component testing, reassembly and adjustments to the units. (10-10)0

1 Sem Hr

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies carburetor fuel supply service terminology, operation, and diagnosis. Develops skills in all major components, their adjustments and correct operation in supplying the carburetor with fuel. (10-15)

1.5 Sem Hrs

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies fuel injection supply service terminology, operation, and diagnosis. Develops skills in all major components and their correct operation in supplying throttle body and port injection with fuel including electronic controls. (14-16)Q

1 Sem Hr

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies carburetor fuel delivery terminology, operation, and diagnosis. Develops skills in the electronic control service, on carburetor adjustments and repair. (10-15)

1.5 Sem Hr

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies throttle body and port fuel injection service, terminology, operation, and diagnosis. Develops skills in the electronic control service and repair, component service and adjustment. (14-16)0

6 Sem Hrs

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies units of instruction necessary for a thorough understanding of ignition systems, emission control systems, and driveability diagnosis. Develops skills through controlled learning experiences with ignition systems, emission control systems, and driveability diagnosis. (50-80)FW

**1.5 Sem Hrs**

Prerequisite: Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies theory of how ignition is accomplished, terminology, operation, and diagnosis. Develops skills in the distributor and distributorless ignition operation principles. (16-13)0

1.5 Sem Hrs

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies operation of common engine performance test equipment, terminology, operation, and diagnosis. Develops skills in using the oscilloscope, lab scope, 4 gas analyzer, D.M.M., vacuum gauge, scanner. (16-13)0

1 Sem Hr

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies Chrysler product engine performance service, terminology, operation, and diagnosis. Develops skills in the ignition system, computer, fuel system, and engine performance/driveability service. (6-18)0

**AUT 224D General Motors Engine Performance Service 1 Sem Hr**

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies G.M. product engine performance service, terminology, operation, and diagnosis. Develops skills in the ignition system, computer, fuel system, and engine performance/driveability service. (6-18)0

1 Sem Hr

**Prerequisite:** Minimum C (2.0) grade in both AUT 100 and AUT 108. Studies Ford product engine performance service, terminology, operation, and diagnosis. Develops skills in the ignition system, computer, fuel system, and engine performance/driveability service. (6-18)0

1 Sem Hr

Prerequisite: Any two automotive clusters and faculty approval. This course is designed to provide skill building time through experiences gained by servicing customer vehicles at an automotive service facility. Service department communications, safety, diagnostic methods, and repair procedures will be emphasized. Since the intended experience is off campus, initiated and scheduled by the student, credit for this course will be normally processed through Credit-By-Portfolio. (0-120) O

## Biology Courses ♦♦♦♦♦

**BIO 101 Introduction to Anatomy and Physiology 4 Sem Hrs**

**BIOL 101: Introduction to Anatomy and Physiology, 3 credits**  
An introduction to basic human anatomy and physiology taught in a lecture-demonstration format. Includes basic principles of the structures and functions of the human body and the terminology related to these topics. (60-0) A

2 Sem Hrs

An introduction to the agents responsible for infectious disease and to the fundamentals of microbial control, including the procedures for sanitation, disinfection, and sterilization. Emphasis on the control of infection and prevention of contamination in medical and dental facilities. Will not substitute for BIO 203. (30-0) A

1 Sem Hr

The epidemiology, pathology, diagnosis, treatment, and attempts at immunization of AIDS. Because of the nature of this infectious disease, the secondary infections most likely to develop in AIDS patients, such as Tuberculosis, *Pneumocystis carinii*, Cytomegalovirus, Kaposi's sarcoma, and others are examined. (15-0) A

4 Sem Hrs

A survey of the broad field of environmental science. Major topics included are: the scientific method, an introduction to chemistry, ecological principles, types of pollutants, energy principles, population issues, the environmental impact of human choices, and the role of economics, risk perception, and political choices in environmental decision-making. Laboratory activities will expose students to a variety of field, survey, and laboratory techniques useful in assessing environmental quality. (45-30) A



**BIO 111 Principles of Biology** 4 Sem Hrs  
An introduction to the fundamental concepts underlying biology. Major topics include basic chemistry of the cell, cell structure and metabolism, molecular biology, genetics, the origin and evolution of living things, and ecological principles. The role of biology in our present world is the unifying theme for the course. Not appropriate for biology majors; applicable as science credit for non-majors. (45-45) A

**BIO 113 Trees and Shrubs of Michigan** 1 Sem Hr  
Identification of the Michigan trees and shrubs indigenous to the Saginaw Valley. Methods used in this field course include use of the leaf, bark, twig, flower and silhouette. Historical and practical information presented as appropriate. (15-0) S

**BIO 114 Animal Behavior - The Wolf** 1 Sem Hr  
Designed to provide student with introduction to study of animal behavior with focus on the wolf. Topics covered will include development of behavior patterns, social behavior, effects of imprinting, role of pheromones in sexual behavior, and hunting behavior. Student will prepare ethogram comparing different subspecies and various breeds of dogs. A weekend field trip is required with student paying own expenses. (15-0) S

**BIO 115 Environmental Issues** 2 Sem Hrs  
Designed to develop an understanding and appreciation of the interacting forces that comprise our environment. Emphasis will center on the modern ecological problems involved in human's relationship to the geographic area under study as it has been affected by the history, economics and ecological conditions. Using the Saginaw Valley, students will examine various aspects of the exploitation, conservation, and control of the Valley's environment. Credit may be earned in BIO 115 or POL 115 but not in both. (30-0) DW

**BIO 116 Winter Ecology** 1 Sem Hr  
Explores the adaptations and coping behaviors of organisms and communities to the additional stresses placed on them by winter. Major topics include: weather and climate, hibernation, freezing avoidance, community changes, and behavior of animals. In addition, students will identify plants, animal tracks, insect galls, bird nests, and various kinds of snow conditions. A weekend field trip is required. Student must pay own expenses. (15-0) W

**BIO 117 Birds of Michigan** 1 Sem Hr  
Identification of resident and migratory birds by sight and song. Includes bird nesting, feeding and territorial behavior. Taught primarily in the field. (15-0) S

**BIO 118 Michigan Wildflowers** 1 Sem Hr  
Identification of common seasonal wildflowers of the open field and deciduous woods. Includes ecological significance of major families of flowers. Historical and practical information presented when appropriate. Taught primarily in the field. (15-0)

**BIO 119 Stream Ecology** 1 Sem Hr  
Designed to introduce the student to the physical environmental factors that affect organisms inhabiting streams as well as the human influence. The energy flow through stream ecosystems will be emphasized along with the lifestyles and interdependencies of stream animals. Field and laboratory work on 2 different kinds of streams will be a necessary component. A weekend field trip will be required with the student paying own expenses. (10-10) FS

**BIO 120 Introduction to Environmental Studies (Field Course)** 4 Sem Hrs  
Designed to familiarize students with the history and methodology associated with scientific method. Introduces the manner in which the environmental effects of man's presence on Earth are monitored. Students will devise and carry out supervised research projects while at a field site. Field sites will be selected so that a variety of ecosystems will be encountered. Skills such as use of taxonomic keys, monitoring of wildlife, and operation of scientific equipment will be stressed. Fees: Special fees will be assessed to cover the costs of class objectives at off-campus sites; i.e. travel, etc. (45-45) S

**BIO 123 Survey of Plant Communities** 1 Sem Hr  
Discusses the influence of physical factors on the varieties of plant communities. Uses the interdependency of organisms as an underlying theme. Examines effects of humans on the nature of plant communities. Emphasizes field work and use of field keys and reference materials for plant identification. Weekend field trip is required. (10 - 20)

**BIO 130 Introduction Chemistry and Cell Biology** 3 Sem Hrs  
An introduction to the principles and concepts of chemistry and cell biology for students entering allied health curricula. Includes basic math for science, the laws of thermodynamics, theory of atomic structure, chemical bonding, acids bases, and buffers; introduction to organic chemistry, cell structure and function, basic metabolic pathways, mitosis, meiosis, classical and physiological genetics. Recommended prerequisite to BIO 131 and 132 sequence. (30-30) A

**BIO 131 Anatomy and Physiology I** 4 Sem Hrs  
Prerequisite: BIO 130 with a C (2.0) minimum grade or successful completion of BIO 130 competency exam. The first course in a two semester sequence suitable for students preparing for various health care professions. Following a brief review of chemistry and cell biology, major consideration is given to the anatomy and physiology of tissues, sensory organs, blood and skin, and to muscular, skeletal, nervous, and endocrine systems. Laboratory activities include identification of tissues, bones, muscles, nerves, and blood vessels through the use of dissection and preserved materials; physiology experiments relate to muscle, nerve, sense organs, circulatory & endocrine functions. Due to the rapid change in information in the area of human physiology, credits earned in this course may only be acceptable to specified Delta College health curricula for a certain period of time. Consult curricula guidesheets for exact information. (45-45) A

**BIO 132 Anatomy and Physiology II** 4 Sem Hrs  
Prerequisite: BIO 131 with a C (2.0) minimum grade. Topics covered include: cardiovascular, lymphatic, respiratory, digestive, reproductive and urinary systems; nutrition, metabolism, embryology, fluids and electrolytes. Laboratory activities include: anatomical studies of these systems using preserved materials and models, as well as physiology experiments relating to metabolic rates, control of breathing, digestive enzymes & kidney physiology. Endocrine influence on these systems is discussed. Due to the rapid change in information in the area of human physiology, credits earned in this course may only be acceptable to specified Delta College health curricula for a certain period of time. Consult curricula guidesheets for exact information. (45-45) A

**BIO 145 Human Genetics** 4 Sem Hrs  
Prerequisites: BIO 111 or BIO 130, or permission of the instructor. An introduction to human genetic principles and issues. Major topics include: Mendelian and multifactorial inheritance, chromosomal abnormalities, molecular genetics and genetic engineering, the etiology of birth defects and cancer, pedigree analysis, reproductive technologies, prenatal diagnosis, and genetic counseling. The social and ethical issues associated with recent advances in genetics will also be explored. Credit may be earned in BIO 145 or BIO 199H but not in both. (60-0) WD

**BIO 160 Human Anatomy & Physiology Review** 4 Sem Hrs  
Prerequisites: Minimum grade of "C" in both BIO 131 and BIO 132 or successfully pass challenge exams for BIO 131 and BIO 132. Provides comprehensive review and update of contents of BIO 131 and BIO 132 using cooperative learning found in Health Care Team concept. Focuses on developing and strengthening abilities in critical thinking, problem solving, and student directed learning while establishing mastery of material. (45-45).

**BIO 171 Integrated General Biology I** 4 Sem Hrs  
Prerequisite: BIO 111 or high school Chemistry and Advanced Biology with grade of B or better recommended. An introduction to the Scientific Method and the diversity of life with an emphasis on biochemistry, cell structure and function, bioenergetics and metabolism, plus molecular, Mendelian, and developmental genetics. Intended for science majors (i.e. biology, pre-med, pre-dent, pre-pharmacy, etc.) and is first course in a two semester sequence. (45-45) FW



**BIO 172 Integrated General Biology II****4 Sem Hrs**

Prerequisite: BIO 171. The second course in a two-semester sequence for biology, pre-med, pre-dent, pre-pharm, etc., majors. Major topics include: a survey of the five kingdoms emphasizing comparative anatomy, development and ecological roles, patterns and mechanisms of evolution, population genetics, embryology, behavior, and ecology. (45-45) FW

**BIO 180 Wastepan Software****1 Sem Hr**

WASTEPLAN is a microcomputer-based approach that forecasts longterm economic impacts of any combination of composting, recycling, landfilling, incineration, or other activities involved in conventional integrated solid waste plans. These forecasts can help planners answer "what-if" questions associated with alternative sizes of wasteshed, expected volumes of collectibles, and alternative collection and disposal practices. Case histories will be used. This is designed for public and private sector policy makers, elected officials, public works managers, waste management professionals, students interested in environmental science careers, and interested citizens. (18-0) W

**BIO 199H Human Heredity and Sexuality****4 Sem Hrs**

Prerequisites: High school Biology and Chemistry and approval by Honors Program Director. An introduction to human heredity, sexuality, and ethical implications of expanding scientific knowledge. Major topics include Mendelian, chromosomal and multifactorial inheritance, sexual development, AIDS, and molecular genetics. Topics such as eugenics, cancer, IVF, genetic engineering, genetic screening, AIDS awareness and sexuality are explored. Occasional field trips and guest speakers. Non-honors students may enroll in this course with permission of the instructor. Credit may be earned in BIO 199H or BIO 145 but not in both. (45-45) FD

**BIO 203 General Microbiology****4 Sem Hrs**

Prerequisite: BIO 111 or BIO 132 with a grade of C (2.0) or better, or permission of the instructor. A survey of the comparative biology microbes including the bacteria, viruses, fungi, algae, and protozoans. Emphasis is on the distribution and activities as related to: microbial nutrition & anatomy, diseases, infection & immunity & growth. The lab emphasizes aseptic technique, development of skills necessary to handle microbes, and the characterization of unknown microbes. Due to the rapid change in information in the area of microbiology, credits earned in this course may only be acceptable to specified Delta College health curricula for a certain period of time. Consult curricula guidesheets for exact information. (45-60) A

**BIO 215 Field Ecology****4 Sem Hrs**

Prerequisite: BIO 111. This course will explore a variety of ecological interactions, with special emphasis on the detailed field analysis of particular ecosystems, the successional stages leading to a climax community, and the natural history of particular plants and animals. Techniques for the analysis of populations and collection of field data will be an integral part of the course. (45-45) S

**BIO 230 Physical Anthropology and Archeology****4 Sem Hrs**

An introduction to the origin and evolution of humankind's physical and cultural development. Major emphases are on the evidence and theories of human evolution and a survey of Old World and New World Archeology. Credit may be earned in BIO 230 or SOC 230 but not in both. (60-0) DFW

**BIO 240 Human Anatomy****4 Sem Hrs**

Prerequisite: BIO 171 or permission of instructor. The anatomy of the human body is presented on an integrated regional basis, supplemented by relevant histological, embryological, and functional considerations. The laboratory emphasizes regional dissections of the cat. Designed to meet the needs of biology majors and pre-professional science curricula, including all transfer health-related fields. (45-45) FD

**BIO 241 Physiology****4 Sem Hrs**

Prerequisite: BIO 171 or permission of instructor. Background in anatomy and chemistry is desirable, but not required. The aim of the course is to provide students with an introduction to the functional integration of the major organ systems of animals, with special emphasis on the human body. Emphasis is placed on the ways in which the various systems interact to maintain homeostasis of the individual. The labora-

tory experiments illustrate classical as well as modern approaches to the physiology of various organ systems. (45-60) WD

**BIO 268 International Studies in Biology****4 Sem Hrs**

A biologic interpretation of selected world regions with emphasis on natural history, fauna and flora, and ecological relationships. Includes class lectures, individual consultation, and international field study. Expenses for the field study must be borne by the student. (60-0) O

**BIO 274 Introduction to Biotechnology****2 Sem Hrs**

Prerequisite: CHM 112 and BIO 172. Provides a more detailed look at cell and molecular biology including an overview of the three laboratory applications essential to biotechnology: recombinant DNA, protein purification, and cell/tissue culture. Designed for students interested in biochemistry, molecular biology or biotechnology. Meets requirements of Ferris State University's Bachelor's program in Biotechnology. (30-0)

**BIO 290-299 Special Projects in Biology****O****Broadcasting and****Telecommunications Courses ♦♦♦♦♦♦♦♦****BRT 130 Electronic Media & Society****3 Sem Hrs**

Examines electronic media and its impact on society. Analyzes how telecommunication systems are integrated into society through worldwide social, cultural, economic, political and educational linkages. (45-0) A

**BRT 149 Television Studio Operations I****3 Sem Hrs**

Prerequisite or concurrent: BRT 150 and BRT 156 with C (2.0) minimum grades. Introduction to television studio production. Emphasis is on operation of television cameras, lenses, microphones, audio boards, lighting equipment, and videotape. Each student is scheduled for 30-40 hours as an observer/participant in studio production and in Master Control Room (MCR) operation. These times are arranged with the staff Productions and Operations Manager. (30-30) FW

**BRT 150 Broadcast Writing****3 Sem Hrs**

Prerequisite or concurrent: ENG 111. Introduction to broadcast writing from conceptualization to practical application. Major areas of scripting/writing emphasis include news, continuity, commercial, and documentary. (45-0) FW

**BRT 153 Broadcast Performance****3 Sem Hrs**

Introduction to broadcast performance. Emphasis is on presentations before microphones and cameras. Dress, movement, make-up, lighting, and delivery are all examined in such major performance situations as interviews, discussions, newscasts, commercials, and product demonstrations. (30-30) FW

**BRT 154 Television Studio Operations II****3 Sem Hrs**

Prerequisite: BRT 149 with C (2.0) minimum grade. Advanced principles, procedures, and techniques of television studio production. Through actual production work, emphasis is placed on producing, directing, staging, design, and operation of production facilities. Each student is scheduled for 30-40 hours as a participant in studio production and in Master Control Room (MCR) operation. These times are arranged with the staff Productions and Operations Manager. (30-30) FW

**BRT 156 Audio Operations I****3 Sem Hrs**

Introduction to the basic aspects of audio engineering: training in the performance characteristics and operation of audio equipment including microphones, consoles, reproduction facilities (audio record/play machines, turntables, compact disc players), and basic processing (equalization, echo, reverberation). Also covered will be the fundamentals of audio tape editing. (30-30) FW

**BRT 157 Television Field Production****3 Sem Hrs**

Prerequisite: BRT 149 with C (2.0) minimum grade. Principles, procedures, and techniques of television field (non-studio) production. Individual video productions in various technical formats are produced. Work with portable video equipment in the field is required. (30-30) F



**BRT 177 Telecommunications Facilities****4 Sem Hrs**

General overview of the basic operations and organization of telecommunications facilities, including radio and television broadcasting stations, cable television services, and corporate media production departments. Course will feature guest lecturers on the topics of programming, traffic, fundraising and underwriting, sales, promotions and public information, engineering and management. Within each category, similarities and differences between the various types of telecommunications facilities will be explored. On-site facility tours will be included. (60-0) O

**BRT 220 Broadcast History, Law and Responsibility****4 Sem Hrs**

Fundamental historic and legal principles of broadcasting. The history of broadcasting involves the origin, development, nature and function of radio and television stations and networks. The economics of the broadcasting industry are discussed along with self-regulation and social controls in modern society. The legal principles involve communications law regulatory acts and agencies, self-regulatory codes, labor unions, and the ethical and moral considerations in broadcasting. Pending legislation affecting broadcasting is examined, as well as future technical and legal developments. (60-0) O

**BRT 222 Broadcast Journalism****3 Sem Hrs**

Prerequisite: BRT 150 and BRT 156 with C (2.0) minimum grades. Principles of news gathering, editing, and presentation for broadcast. Course will include visits by area broadcast journalists to discuss issues and techniques. Students will complete field reporting exercises for radio and television news. (30-30) F

**BRT 227 Broadcast Sales****3 Sem Hrs**

Basic marketing concepts in broadcast time and spot sales. Information on the psychological, sociological, economic, and communicative aspects of salesmanship are applied to the broadcast industry. Actual sales presentations are prepared for hypothetical clients. Practicing professionals in the broadcast sales field share their experiences with the class. (45-0) O

**BRT 230 Broadcast Audio Production****3 Sem Hrs**

Prerequisite: BRT 153 and BRT 156 with C (2.0) minimum grades. Detailed study with an audio design orientation of various aspects of broadcast audio production. Areas of study to include basic training in technical listening, radio arts and entertainment production, and audio collage techniques and their use in broadcast dramas and documentaries. Students will be asked to produce mock radio programs of various formats in addition to other lab exercises. Potential for direct student interactive experience with WUCX/Delta Broadcasting FM Public Radio. (30-30) F

**BRT 232 Radio News Production****3 Sem Hrs**

Prerequisite: BRT 153 and BRT 222 with C (2.0) minimum grades. Advanced study and training in the production of news for radio. News services, field reporting, feature production, and newscast producing and editing will be explored. Students will be asked to regularly submit individual news productions in a variety of journalistic formats. Potential for direct student interactive experience with WUCX/Delta Broadcasting FM Public Radio. (30-30) F

**BRT 234 Music Programming Workshop****3 Sem Hrs**

Prerequisite: BRT 230 with C (2.0) minimum grade. In-depth study of music program production for radio. Comparison of commercial and public radio, and the elements and constraints shaping each format. Comprehensive survey of musical styles and how they're utilized to create programming formats, as well as the study of various music sources and services. Each student will be asked to weekly produce an hour-long mock radio program with complete and detailed play list and log. Various musical formats will be required. Potential for direct student involvement with WUCX/Delta Broadcasting Public Radio program production. (30-30) W

**BRT 251 Television Producing and Directing****3 Sem Hrs**

Prerequisite: BRT 154 and BRT 157 with C (2.0) minimum grades. Advanced techniques in the art of television producing and directing. Emphasis is placed on individual responsibility for complete program planning and organization: production equipment, personnel utilization, talent coordination, and camera direction. (30-30) W

**BRT 256 Audio Operations II****3 Sem Hrs**

Prerequisite: BRT 156 with C (2.0) minimum grade. Advanced principles, procedures, and techniques of audio engineering. Provides training in remote and field recording, studio and multitrack recording, and standard processing facilities (equalizers, effects generators, noise gates). A wide spectrum of industry applications will be discussed. (30-30) O

**BRT 257 Advanced Television Field****3 Sem Hrs**

Prerequisite: BRT 157 with C (2.0) minimum grade. Advanced principles, procedures, and techniques of television field (non-studio) production. Expands upon principles of field production including multiple camera remote operations and simple field troubleshooting. Editing techniques are explored in depth. (30-30) O

**BRT 260 Assistant Director I****2 Sem Hrs**

Prerequisite: BRT 149 with C (2.0) minimum grade and instructor approval. In-service training in television production in the areas of producing-directing, operations, and programming under the direct supervision of a television staff member. A minimum of four hours of work per week in television production is required. (0-60) O

**BRT 261 Assistant Director II****2 Sem Hrs**

Prerequisite: BRT 154 and BRT 260 with C (2.0) minimum grades and instructor approval. Expanded in-service training in the areas of producing-directing, operations, and programming under the direct supervision of a television staff member. A minimum of four hours of work per week in television production is required. (0-60) O

**BRT 270 Current Trends and Issues - Seminar****2 Sem Hrs**

Prerequisite: BRT 200 or instructor approval. Seminar in current issues that affect broadcasting and/or other areas of telecommunications. Provides timely information on trends and practices within the telecommunications industries discussed, as well as within related technologies and professions. (30-0) O

**BRT 290-299 Special Projects in Broadcasting or Telecommunications. O****Computer Assisted Drafting Courses ♦♦♦♦****CAD 101 AutoCAD I****1 Sem Hr**

Prerequisite: DRF 104 or passing score on drafting test (see instructor). Introduction to AutoCAD, the microcomputer Cad software standard of the industry. Students develop several 2-D drawings. (15-0) O

**CAD 102 AutoCAD II****1 Sem Hr**

Prerequisite: CAD 101 or passing score on CAD 101 test (see instructor). A continuation of the principles of AutoCAD I. Manipulation of 2-D drawings and the development of several 3-D drawings using an extrusion method and the newer 3-D capabilities of AutoCAD release 10 and 11. Use of viewports, user coordinate system, wire mesh to solid conversion. (15-0) O

**CAD 103 AutoCAD III****1 Sem Hr**

Prerequisite: CAD 102 or CAD 114 or passing score on CAD 102 test (see instructor). Advanced training in AutoCAD by the customizing of menus through the use of menu macros. (15-0) O

**CAD 104 AutoCAD IV****1 Sem Hr**

Prerequisite: MT 110, and either CAD 102 or CAD 114 or passing score on CAD 102 test (see instructor). An introduction to the AutoLISP programming language. Student develops an understanding of both the capabilities and limitations of this powerful dialect of LIST processing (LISP). Covers the necessary skills to design, write, debug, load and execute valuable AutoLISP routines along with the knowledge for customizing your own menus to increase productivity. (15-0) O

**CAD 105 AutoCAD V****1 Sem Hr**

Prerequisite: CAD 104 or passing score on CAD 104 test (see instructor). Advanced training in AutoLISP programming. Use of polar coordinates and angles, ADAD.LSP functions, Macros. (15-0) O



**CAD 114 AutoCAD Introduction****2 Sem Hrs**

Prerequisite: Previous industrial drafting experience or one year of high school drafting. AutoCAD software used to draft two dimensional multi-view drawings and three dimensional wire frame constructions. Completed projects include arrays, blocks, assigned properties, notations, and dimensions. Knowledge of the software, hardware and the MS-DOS operating system is acquired in the process of developing a Computer Aided Design and Drafting drawing for multi-pen plotting. Credit may be earned in either CAD 114 or SKCAD 114 but not in both. (30-0) A

**CAD 214 AutoCAD Techniques****2 Sem Hrs**

Prerequisite: CAD 114 and either DRF 104 or DRF 105. Extends skills in the use of AutoCAD and builds efficiency in the production of CAD drawings. Developing two dimensional multi-view drawings fully noted, sectioned, and dimensioned is emphasized. Adding attributes and composing complete working drawings also covered. Students complete three dimensional drawings to prove and verify designs and display them as expanded multi-views. (30-0) A

**CAD 216 AutoCAD Intermediate****2 Sem Hrs**

Prerequisite: CAD 214 or equivalent AutoCAD experience. Builds skills in the 2D use of AutoCAD in the development of fully dimensioned, noted and sectioned working drawings. Develops 2D multi-view drawings using the line, circle, arc, mirror, copy, array, offset, pedit, move, rotate, chamfer and fillet commands. (30-0)

**CAD 224 AutoCAD Advanced****2 Sem Hrs**

Prerequisite: CAD 214. Develops skills in the use of AutoCAD and increases the options and methods of production of CAD drawings. Develops capability with AutoCAD SYSTEM VARIABLES, DIMENSIONING VARIABLES, CUSTOMIZING SCREEN & TABLET MENUS, SYMBOL LIBRARIES and SCRIPT FILES. Included is an introduction to AutoLISP, extended file manipulation and command of DOS. Both 2D multi-view and 3D wireframe drawings are assembled into working drawings. (30-0) FS

**CAD 226 AutoCAD 3D Advantage****2 Sem Hrs**

Prerequisite: CAD 214 or equivalent AutoCAD experience. Develops skills in the use of 3D AutoCAD and increases the options and methods of production of 3D AutoCAD drawings. Develops capability with 3D AutoCAD Wireframe, Surfaces and Solids, Model Space and Paper Space. Also includes extended experience with System Variables, file manipulation and command of DOS. (30-0)

**CAD 290-299 Special Projects in Computer Assisted Drafting O****Child Development Courses ♦♦♦♦♦♦♦♦♦♦****CD 104 Basic Training for Child Care****1 Sem Hr**

Prerequisite: Students must be currently working in a licensed or registered family or group day care home or child care center. Designed for new, inexperienced and/or untrained child care workers. Designed to give a preliminary survey of child development, behavior management, safety and sanitation issues, and program operation. (15-0) O

**CD 105 The Growing Years****3 Sem Hrs**

An introduction to child development from the earliest womb environment through early childhood into adolescence. Emphasis is on the interplay of biological factors, human interaction, social structure and other cultural forces in shaping the growing child. This course is not equivalent to either CD 114 or 115 and is not intended for students enrolled in the Child Development curriculum. (45-0) O

**CD 111 Introduction to Early Childhood Education****2 Sem Hrs**

CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Introduces the field of early childhood education with an overall view of goals, children, schools, teaching techniques and professionalism. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development. (30-0) F

**CD 112 The Early Childhood Program Education****2 Sem Hrs**

CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Provides the basic curriculum and

organizational skills needed to work in an early childhood program. Identifying, developing and presenting developmentally appropriate activities for the early childhood program will be a major part of curricula information. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development or Nanny Program. (30-0) F

**CD 113 Interaction with Young Children****3 Sem Hrs**

CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Introduces the student to basic skills needed to interact with young children in a positive manner. Identifies instances of growth-producing and/or growth-restricting child behavior and the capability to recognize and interpret a variety of guidance techniques are the major objective of the course. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development or Nanny Program. (45-0) F

**CD 114 Child Development I****3 Sem Hrs**

CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Introduces the student to the topic of human growth and development from birth through adolescence. Emphasizes observation techniques and theories of human development. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development or Nanny Program. (45-0) F

**CD 115 Child Development II****3 Sem Hrs**

Prerequisites: CD 111, 112, 113, 114 and 160. CD 115, 116 and 117 must be taken concurrently. Exceptions require Coordinator's approval. Provides an in-depth understanding of the emotional, intellectual, social, and physical development in children from conception through adolescence. Considers the effect of heredity, environment, culture, and values on children's behavior, as well as, the effect children have on adults' behavior. Credit may be earned in PSY 223 or CD 115 but not in both. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development or Nanny Program. (45-0) W

**CD 116 Families in the American Culture****3 Sem Hrs**

Prerequisites: CD 111, 112, 113, 114 and 160. CD 115, 116 and 117 must be taken concurrently. Exceptions require Coordinator's approval. Provides the background needed to work with parents and children in a variety of family situations. Explores differing family roles and structures, and ways to support families in crisis. Emphasizes diversity in social classes, economic resources, cultural customs and tradition, and the need for parent-caregiver communication. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development or Nanny Program. (45-0) W

**CD 117 Practicum for Early Childhood Assistant****6 Sem Hrs**

Prerequisites: CD 111, 112, 113, 114 and 160. CD 115, 116 and 117 must be taken concurrently. Exceptions require Coordinator's approval. Focuses on interaction skills, child care skills and techniques for supporting a lead teacher in the day-to-day operation of an early childhood program. At least four days a week will be spent in an early childhood program, and students will meet with the instructor once a week. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development. (37.5-180) W

**CD 118 Toddlers: Development and Programming****3 Sem Hrs**

Designed to introduce the student to the growth and development patterns of the toddler age child and develop skills in the planned application of growth and development principles to the group care situation. Students will develop materials and resource files for use in the toddler classroom. (45-0) O

**CD 140 Caring for Preschool Children I****2 Sem Hrs**

Organized around the Child Development Associate (CDA) Competency Standards to promote professional development and recognition for caregivers in center based/home based settings with young children. Skills and knowledge in six of the 13 CDA functional areas will be acquired; Safety, Health, Learning Environment, Physical, Cognitive, and Communication. (30-25) O



**CD 141 Caring for Preschool Children II** 2 Sem Hrs  
Organized around the Child Development Associate (CDA) Competency Standards to promote professional development and recognition for caregivers in center based/home based settings with young children. Skills and knowledge in seven of the 13 CDA functional areas will be acquired; Creative, Self, Social, Guidance, Families, Program Management, Professionalism. (30-25)O

**CD 142 Preparation for CDA Assessment** 1 Sem Hr  
Designed for child care providers who are preparing for their CDA final assessment. CDA candidates will complete their professional resource file, undergo observations by a CDA professional advisor to demonstrate their skills in competency areas for the CDA final assessment, and complete necessary documentation. (15-0) O

**CD 160 Introductory Practicum in Child Development Education** 2 Sem Hrs  
CD 111, 112, 113, 114 and 160 must be taken concurrently. Exceptions require Coordinator's approval. Introduces the early childhood classroom, observing and participating with young children and their teachers. At least two half days a week will be spent in a quality early childhood program. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science in Child Development. (15-80) F

**CD 200 Practicum as a Lead Teacher** 4 Sem Hrs  
Prerequisite: CD 111, 112, 113, 114, 115, 116 and 117. Prepares for a lead teaching position, as well as, a program management position. Stresses the development of teaching skills and program management skills. At least four days a week will be spent in early childhood program. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science in Child Development. (15-180)

**CD 290-299 Special Projects in Child Development** O

## Cooperative Education Courses ♦♦♦♦♦♦♦♦

Student must carry a minimum of 12 credit hours including the co-op class, maintain a minimum 2.0 grade point average, and work 15-25 hours per week on a job relating to his/her program. Co-op coordinator must approve the co-op work station. Students are advised to consult with co-op coordinator about appropriate course number as course numbers depend upon program.

**CED 103, 113, 123, 133, 143, 153, 173, 183** 1 Sem Hr  
**Cooperative Education**  
Prerequisite: Must be employed and have consent of coordinator. On-the-job training relating to the student's program. Evaluations made by the employer and the coordinator. Class will meet five hours per semester. Term paper and/or project required. Designed for student who is placed in co-op position for the last 1/3 of the semester. (5-75) FW

**CED 104, 114, 124, 134, 144, 154, 174, 184** 2 Sem Hrs  
**Cooperative Education**  
Prerequisite: Must be employed and have consent of coordinator. On-the-job training relating to the student's program. Evaluations made by the employer and the coordinator. Class will meet ten hours per semester. Term paper and/or project required. Designed for student who is placed in co-op position for the last 2/3 of the semester. (10/150) FW

**CED 105, 115, 135, 145, 155, 175, 185** 3 Sem Hrs  
**Cooperative Education I**  
Prerequisite: Employable skill and consent of coordinator. Places the student in a program-related, supervised work station for on-the-job experience. Evaluations are made by the employer/supervisor and the college coordinator. Class may meet with coordinator two hours per week. Term paper and/or project reports may be required. (15-225) FW

**CED 106, 116, 126, 136, 146, 156, 176, 186** 3 Sem Hrs  
**Cooperative Education II**  
Prerequisite: CED 115, 125, 135, 145, 155, 165, 175, or 185. A continuation of Cooperative Education I, with additional responsibilities at work site. Term paper and/or project may be required. (15-225) FW

**CED 120 Co-Op Retail Management** 3 Sem Hrs  
Prerequisite: Employable skill and consent of coordinator. Places the student in a program-related, supervised work station for on-the-job experience. Evaluations are made by the employer/supervisor and the college coordinator. Class may meet with coordinator two hours per week. Term paper and/or project reports may be required. (15-225) FW

**CED 122 Co-op Fashion/Interior Design** 3 Sem Hrs  
Prerequisite: Employable skill and consent of coordinator. Places the student in a curriculum-related, supervised work station for on-the-job experience. Evaluations are made by the employer/supervisor and the college coordinator. Term paper and/or project reports may be required. (15/225) FW

**CED 163 Co-op Office Professional** 1 Sem Hr  
Prerequisite: Must be employed and have consent of coordinator. On-the-job training relating to the student's program. Evaluations made by the employer and the coordinator. Class will meet five hours per semester. Term paper and/or project required. Designed for student who is placed in co-op position for the last 1/3 of the semester. (5-75) FW

**CED 164 Co-op Office Professional** 2 Sem Hrs  
Prerequisite: Must be employed and have consent of coordinator. On-the-job training relating to the student's program. Evaluations made by the employer and the coordinator. Class will meet ten hours per semester. Term paper and/or project required. Designed for student who is placed in co-op position for the last 2/3 of the semester. (10-150) FW

**CED 165 Co-op Office Professional** 3 Sem Hrs  
Prerequisite: Employable skill and consent of coordinator. Places the student in a program-related, supervised work station for on-the-job experience. Evaluations are made by the employer/supervisor and the college coordinator. Class may meet with coordinator two hours per week. Term paper and/or project reports may be required. (12-225) FW

**CED 166 Co-op Office Professional** 3 Sem Hrs  
Prerequisite: CED 165. A continuation of CED 165 with additional responsibilities at work site. Term paper and/or project may be required. (15-225) FW

**CED 205, 215, 225, 235, 245, 255, 275, 285** 2 Sem Hrs  
**Cooperative Education III**  
Prerequisite: CED 106, 116, 126, 136, 146, 156, 166, 176, or 186. A continuation of Cooperative Education I and II, with additional responsibilities at work site. A five-hour workshop per semester. (5-225) FW

**CED 206, 216, 226, 236, 246, 256, 276, 286** 2 Sem Hrs  
**Cooperative Education IV**  
Prerequisite: CED 205, 215, 225, 235, 245, 255, 265, 275, or 285. A continuation of Cooperative Education I, II, and III, with additional responsibilities at work site. A five-hour workshop per semester. (5-225) FW

**CED 207, 217, 227, 237, 247, 257, 277, 287** 1 Sem Hr  
**Cooperative Education V**  
Prerequisite: CED 206, 216, 226, 236, 246, 256, 266, 276, or 286. A continuation of Cooperative Education I, II, III, and IV, with additional responsibilities at work site. A 2.5 hour workshop per semester and/or a major project or paper with one-on-one consultation with co-op coordinator may be required. (2.5-162.5) FW

**CED 208, 218, 228, 238, 248, 258, 278, 288** 1 Sem Hr  
**Cooperative Education VI**  
Prerequisite: CED 207, 217, 227, 237, 247, 257, 267, 277, or 287. A continuation of Cooperative Education I, II, III, IV, and V, with additional responsibilities at work site. A 2.5 hour workshop per semester and/or a major project or paper with one-on-one consultation with co-op coordinator may be required. (2.5-162.5) FW

**CED 265 Co-op Office Professional** 2 Sem Hrs  
Prerequisite: CED 166. A continuation of CED 166 with additional responsibilities at work site. A five-hour workshop per semester. (5-225) FW







**CIS 102 Lotus II****1 Sem Hr**

Building on skills acquired in Lotus I, students will learn to manage large worksheets, locate circular references, freeze titles, hide columns, use windows, extract and combine files, and memo preparation. Also covered will be creation of line and bar graphs, pie charts, and the print graph program. (15-0) O

**CIS 103 Lotus III****1 Sem Hr**

Prerequisite: CIS 102. Worksheets will be used for projections and what-if analysis. Students will learn to create and modify a database and use sort, query, and extract to access the database. Writing, editing, and testing macros, and interactive macros will be covered. May include a project option. (15-0) O

**CIS 112 Introduction to AS400 and PROFS****1 Sem Hr**

Provides a basic orientation to the IBM AS/400. The class materials will cover PROFS (Professional Office) operations such as Electronic Mail and Calendar Scheduling. File creation, input screens, compiling and executing programs will be taught. Lab assignments will be required. (15-0) A

**CIS 114 Computer Fundamentals/IBM****1 Sem Hr**

Provides a basic orientation to the IBM PC and its software. Includes utilization of software and hardware features. Introduces Word processing, spreadsheet, DOS and WINDOWS. Students who have taken CIS 133 or plan to enroll in CIS 133 should not take CIS 114. (15-0)

**CIS 115 Computer Fundamentals/MacIntosh****1 Sem Hr**

An introduction to the MacIntosh as a business computer. Features to be presented include the graphical user interface and mouse pointer, and a simple data base using Hypercard. Assignments using popular business application software packages will be given. Microcomputer compatibility will be addressed and students will observe IBM PC-emulation software and MacIntosh access of MS-DOS created files. (15-0) AD

**CIS 116 Introduction to Data Communications****2 Sem Hrs**

Prerequisite: CIS 133 or permission of instructor. Introduces Data Communications. All aspects of electronic data transfer will be addressed including how to use communication hardware and software. Lab assignments and a project are required. (30-0) O

**CIS 117 MS DOS****1 Sem Hr**

Provides a basic orientation to PC operating systems. Presents IBM MS disk operating systems (PCDOS), including the basic concepts and storage of floppy and hard disk. Emphasizes directory and sub directory creation, copying files, recovery of files and other operating systems features needed in the daily operations of microcomputers. (15-0)

**CIS 118 IBM DOS and Windows****2 Sem Hrs**

Provides a basic orientation to PC operating systems. Emphasizes DOS (disk operating system), directory and sub directory creation, copying files, recovery of files and other operating systems features needed in the daily operations of microcomputers. Includes the basic concepts of storage on floppy and hard disk. Introduces third party enhancement products, batch files, and WINDOWS. (30-0)

**CIS 119 Micro Hardware Install****1 Sem Hr**

Prerequisite: CIS 118. A basic orientation to installing peripheral devices, modems, memory and boards. Preventive maintenance and trouble shooting features will be a major activity. A hands-on class with lab activities. Students will be placed in a repair facility for part of the class. (15-0) O

**CIS 120 Micro Computers in Business****3 Sem Hrs**

A survey of small computer systems used for personal, business, and industrial applications. Includes hardware, software, and operating systems. Wordprocessing, spreadsheets, and database software as well as the evaluation and selection of systems will be emphasized. Lab assignments will be required. (45-0) A

**CIS 128 WINDOWS NT Operating System****2 Sem Hrs**

Basic orientation to the WINDOWS NT Operating System. Emphasis will be placed on the creation, copying, and recovery of files and the use of applications within this operating system that are needed for its daily operation. Installation and customizing features will also be presented. (30-0) F,W,S

**CIS 130 Developing Programming Logic****2 Sem Hrs**

Prerequisite: CIS 133. The use of programmer tools to design, develop the logic, and document programs. VTOCs (Visual Table of Contents),

flowcharts, HIPO (Hierarchy plus Input-Process-Output) charts, Massi-Shneiderman charts, pseudocode, and walkthroughs will be used in the design and evaluation of typical problems. (30-0) FW

**CIS 132 Spreadsheet Fundamentals****2 Sem Hrs**

Surveys Lotus 1-2-3 on the IBM PC including evaluation of spreadsheets, data base, graphics, report formatting and macros as applied to personal small business, and industrial settings. Credit may be earned in CIS 132 or CIS 134 but not in both. (30-0)

**CIS 133 Introduction to Computer Information Systems****4 Sem Hrs**

Presents electronic mail on the IBM AS400 and PC software of word processing, electronic spreadsheet, graphics and database. Introduces BASIC programming. DOS, and WINDOWS. (60-0)

**CIS 134 Lotus 1-2-3****3 Sem Hrs**

Surveys Lotus 1-2-3 on the IBM PC including evaluation of spreadsheets, data base, graphics, report formatting and macros as applied to personal, small business, and industrial settings. Development of a project is required. Credit may be earned in CIS 132 or CIS 134 but not in both. (45-0)

**CIS 135 Information Storage and Retrieval****3 Sem Hrs**

Prerequisite: CIS 112 and 133. Uses AS/400 tools to create a file, to modify or to delete records from files. DBMS (Data Base Management System) software is used to extract reports from an existing database. Includes query language. (45-0)

**CIS 136 Microsoft EXCEL****3 Sem Hrs**

Presents EXCEL features using personal and business applications. Emphasizes features and techniques to develop solutions to spreadsheet problems. Includes evaluation of spreadsheets, data base, report formatting, and macros. Compares EXCEL with other electronic spreadsheets. (45-0) O

**CIS 139 Introduction to Programming Using BASIC****2 Sem Hrs**

Familiarity with microcomputers. Designed as a first class for computer programmers. An introduction to programming design and development using the Microsoft Quick BASIC programming language. Structured programming principles are emphasized, including internal and external program documentation; sequence, selection and repetition constructs; and modular programming. BASIC commands to accomplish the previous principles will be taught. IBM or compatible microcomputers will be used. (30-0) A

**CIS 140 BASIC Programming****1 Sem Hr**

Prerequisite: CIS 139 or instructor approval. Advanced BASIC commands will be presented along with continued use of structured programming principles. Arrays, sequential and random files, screen design and error handling will be covered. IBM or compatible microcomputers will be used. (15-0) A

**CIS 143 Pascal Programming****3 Sem Hrs**

Prerequisite: CIS 133. Includes designing, writing, testing, and debugging Pascal Programs. Programming principles, styles, and approaches to program development will be stressed. (45-0) O

**CIS 170 C++ Programming I****3 Sem Hrs**

Uses the C++ language to introduce program design and development. Develops solutions to computing problems through problem definition, algorithm design and coding. Includes documentation, screen design, and formatting of output. Credit may be earned in CIS 170 or in EGR 170 but not in both. (45-0)

**CIS 201 MMI: Presentation Graphics****2 Sem Hrs**

Prerequisite: CIS 133 or OSE 145. (CIS students should take CIS 133; OSE students should take OSE 145). Develops beginning/intermediate skills in presentation and graphic layout for business and education presentations. Includes computer projection and creation of computer generated transparencies and handouts. Focuses on developing attractive, professional, effective, and well-timed visuals for different business settings using computer graphic presentation software. Credit may be earned in either CIS 201 or OSE 201 but not in both. (30-0) A

**CIS 216 Local Area Networks****3 Sem Hrs**

Prerequisite: Microcomputer background. Covers concepts, architectures, and implementation of Local Area Network(LAN) technology as well as a review of the evolution of Data Communications to its current status. Outside Lab assignments and project required. (45-0) FW



**CIS 234 Applied/Advanced LOTUS 1-2-3****3 Sem Hrs**

Prerequisite: CIS 134 or working knowledge with LOTUS 1-2-3. An IBM-PC business/industry application-oriented course. Includes management and graphics features and introduces the LOTUS 1-2-3 system utilities. Development of a project is required. (45-0) O

**CIS 235 Systems Analysis and Design****3 Sem Hrs**

Prerequisite: CIS 133, CIS 130, 1 semester of accounting, and a programming language course. A study of data processing systems and procedures involving analysis of various existing data processing applications in business and industry. Includes a study of integrated or total management information and data processing systems. Emphasis is given to developing detailed procedures in various areas of management. Designed to study the three phases: Analysis of present information flow; system specification and equipment; implementation and documentation of the system. (45-0) FW

**CIS 240 Windows Programming Using Visual BASIC****3 Sem Hrs**

Prerequisite: CIS 140 and Windows experience. Writes programs in a Windows environment using Visual BASIC to design custom user interfaces with menus and dialog boxes. Discusses object-oriented fundamentals and event-driven programming concepts. Includes work with object linking and embedding (OLE) and creation of an engine for Database access. (45-0) O

**CIS 243 Report Program Generator Programming****3 Sem Hrs**

Prerequisites: CIS 112 and 133. File, input, calculation and output specifications statements for reporting and routine accounting applications will be covered. Programs will be written, compiled, and tested using RPG-III. (45-0) WE

**CIS 245 COBOL Programming****3 Sem Hrs**

Prerequisite: CIS 112 and 130 or permission of instructor. Includes the advantages of Structured Cobol, potential applications and basic syntax. Emphasizes interactive programs, single dimension arrays and file access methods. Implements programs on an IBM AS/400. (45-0)

**CIS 253 Advanced RPG****3 Sem Hrs**

Prerequisite: CIS 243 or consent of instructor. The student will be able to design, code, compile, test, and document programs using RPG III which involve advanced programming concepts. (45-0) O

**CIS 255 Advanced COBOL****3 Sem Hrs**

Prerequisite: CIS 245 or consent of instructor. Includes advanced programming concepts, multiple dimension arrays, Sort/Merge, Screen Design Aid and subprograms. (45-0)W

**CIS 259 Advanced Assembler Concepts****3 Sem Hrs**

Prerequisite: CIS 239 or consent of instructor. the student will be able to design, code, compile, test and document programs using an assembler language. The problems will involve advanced programming concepts. (45-0) O

**CIS 260 dBase****3 Sem Hrs**

Prerequisite: Any microcomputer class. Emphasizes the advantages of database processing, modeling, and design. Discusses design concepts from the standpoint of the user. Uses PARADOX FOR WINDOWS. (45-0)

**CIS 262 dBase Programming****2 Sem Hrs**

Prerequisite: CIS 260. Presents Database programming commands and implementation of those commands within executable programs including modeling, analysis and design of databases. Discusses problems and design from the standpoint of the user. (30-0)W

**CIS 265 Programming in C****3 Sem Hrs**

Recommend strong programming background. Presents general-purpose programming language useful for text processing, numerical calculations, data based programs and interface to operating systems. Covers normal programming procedures and subroutine calls written in other languages. (45-0)

**CIS 266 C++ Object-Oriented Programming****3 Sem Hrs**

Prerequisite: CIS 265 or instructor permission. Studies object-oriented programming concepts through the use of the C++ Language. Analyzes

relationships between C and C++. Includes the use of classes, encapsulation, polymorphism, and inheritance for program design. A project will be developed. (45-0) O

**CIS 270 Expert Systems****3 Sem Hrs**

Prerequisite: CIS 118 or microcomputer or mainframe programming class. Instruction in the advantages and theory of expert systems. User-friendly expert systems will be developed from the problem approach. One shell will be used for the application. One project and lab assignments required. (45-0) O

**CIS 274 Computer Aided Decisions****2 Sem Hrs**

Prerequisites: CIS 133 and GB 245. A interactive business simulation class using the IBM or compatible microcomputer will allow the student to practice the strategic decision making process in management/marketing. Students will explore the use of microcomputer application software in the area of decision support. Topics will include modeling, simulation, query languages, spreadsheets, and expert systems. Strategic decision making situations will be presented to illustrate formulation, solution, and analysis techniques utilized for unstructured decision making in the business environment. (30-0) O

**CIS 290-299 Special Projects in Computer Information Systems****O****Criminal Justice Courses****CJ 101 Police Recruit Training****6 Sem Hrs**

Prerequisite: Must be currently employed full-or part-time by a law enforcement agency, or have completed an Associate Degree upon entry, or will receive an Associate Degree upon completion of the Basic Police Training Academy. OSE 153, PEH 168, and PE 201 must be taken concurrently. Provides the basic training necessary to assume the duties of a police officer in preparation for MLEOTC (Michigan Law Enforcement Officers Training Council) state certification. Includes constitutional law, criminal law, laws of arrest, search and seizure, investigative techniques, first aid, firearms, motor vehicle laws, defensive tactics, and patrol techniques. Contact the Criminal Justice Training Center for information concerning admission requirements, enrollment, and current course fees. To obtain an Associate Degree in Criminal Justice, a student must earn a grade of C (2.0) or better in this course. (470-0)

**CJ 110 Introduction to Criminal Justice****3 Sem Hrs**

Introduction and career orientation to the field of law enforcement and criminal justice. Explores major areas including: the philosophical and historical background of the field; types of courts and agencies in the field and their responsibilities; administrative and technical problems in the field and an understanding of the Bill of Rights Amendments to the Constitution. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0)

**CJ 111 Police Administration****3 Sem Hrs**

Analyzes the functional divisions of the modern police department. Studies management operations, coordination of activities, communications, recruiting, training, public relations, and looks at the future of law enforcement. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0)

**CJ 112 Police Operations****3 Sem Hrs**

Study of patrol as a basic police function, including both the theoretical and functional aspects. Responsibilities of, purpose, methods, types and means of police patrol. Examination of patrol strength layout, beats, technological advancements affecting the patrol officer. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0) FW

**CJ 182 Introduction to Security****3 Sem Hrs**

An introduction and career orientation to the field of security. The major areas explored include: origins and development of security, proprietary security, risk analysis, fire protection, safety, internal theft control, insurance cargo security, computer security, institutional security, and the future of security. (45-0) A



**CJ 184 Industrial Security I 3 Sem Hrs**  
Theoretical approach to the role of security officers in business and industry. Plant and business protection. Legal responsibilities and authority of plant security officers. Problems of business, industrial espionage and petty thefts. Report writing. (45-0) O

**CJ 185 Industrial Security II 3 Sem Hrs**  
Prerequisite: CJ 184. Practical approach to the role of security officers concerning fire prevention, safety program, first-aid and internal security. (45-0) O

**CJ 187 Current Issues in Security 3 Sem Hrs**  
A survey of current issues in security. Topics covered include: Terrorism, espionage, substance abuse, employee theft, computer vulnerabilities, and protection of information. (45-0) O

**CJ 210 Introduction to Criminal Investigation 3 Sem Hrs**  
Prerequisite: CJ 110. Introduces criminal investigation procedures; includes theory of an investigation, conduct at crime scenes, collection and preservation of physical evidence; methods used in police science laboratory; finger prints, ballistics, documents, serology, photography, and related forensic sciences. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0)

**CJ 220 Crime Laboratory Techniques 3 Sem Hrs**  
Prerequisite: CJ 110. CJ 210 must be taken concurrently or prior to. Introduces scientific criminal investigation and criminalistics; includes the proper handling and transmittal of evidence to the crime laboratory, laboratory aids that are available, understanding of the probabilities related to examination of physical evidence. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-30)

**CJ 230 Introduction to Corrections 3 Sem Hrs**  
Designed to provide an understanding of the agencies and institutions that have legal authority over the custody and supervision of offenders. Major areas discussed include the history and development of corrections, community based corrections, local, state and federal correctional institutions, and institutional administration. The correctional treatment of female, male and juvenile offenders will be explored. The role of corrections in the total system of criminal justice will also be covered. One of five courses which will meet the state requirement of 15 credit hours for employment as a correctional officer. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) EA

**CJ 232 Client Relations in Corrections 3 Sem Hrs**  
Designed to create an awareness of the effects of culture and discrimination on the attitude formation of individuals and assist students in identifying various professional responses to human behavior. One of five courses which will meet the state requirement of 15 credit hours for employment as a corrections officer. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) EF

**CJ 233 Client Growth and Development 3 Sem Hrs**  
Designed to enable students to differentiate the various factors that are involved in the development and growth of the criminal. Included will be a discussion of the biological, environmental, and psychological influences. Specific problems such as sexual, substance abuse and medical disorders will be reviewed. Intervention strategies will also be discussed. One of five courses which will meet the state requirement of 15 credit hours for employment as a corrections officer. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) EW

**CJ 235 Correctional Institutions and Facilities 3 Sem Hrs**  
Designed to present an overview of correctional institutions and facilities. Topics covered include the purpose of prisons and correctional institutions, treatment and rehabilitating programs, management and organization of correctional institutions, custodial care, safety and security, and future concerns. One of five courses which will meet the state requirement of 15 credit hours for employment as a correctional officer. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) EF

**CJ 236 Community Based Corrections 3 Sem Hrs**  
An examination of alternative correctional programs commonly referred to as Community Based Corrections. Major topics covered include: the development, history and Michigan laws governing community based corrections, diversion programs, pretrial release, probation, restitution and community service, temporary release, half-way houses, parole, female programs, and sex and drug offender programs. (45-0) WE

**CJ 238 Legal Issues in Corrections 3 Sem Hrs**  
A study of the primary legal issues correctional personnel will be entrusted to enforce and safeguard. Topics covered include an overview of U.S. Constitutional law, the court process from arrest through trial, the structure and function of the U.S. and state courts, and prisoner rights. One of five courses which will meet the state requirement of 15 credit hours for employment as a correctional officer in the state of Michigan. Student must earn a grade of C (2.0) or better in this course to meet this state requirement. (45-0) EFW

**CJ 250 The Juvenile Offender 3 Sem Hrs**  
Major emphases are on the: Theories of causation as applied to juvenile delinquency; work of youth agencies; Michigan Juvenile Law and constitutional safeguards for juveniles; and new development in the prevention of juvenile crime. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0) EFW

**CJ 270 Evidence and Criminal Procedure 3 Sem Hrs**  
A study of the rules of evidence as it affects the criminal justice process. Includes an overview of criminal procedure as it pertains to the rules of arrest, search, and seizure which regulate law enforcement and protects citizen's rights of privacy and presumed innocence. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0) A

**CJ 271 Criminal Law 3 Sem Hrs**  
Prerequisite: A previous course in Criminal Justice or American Government or permission of the instructor. Elements and proof in crime of frequent concerns in law enforcement with reference to principal rules of criminal liability. Importance of criminal law at the enforcement level is considered from crime prevention to courtroom appearance. A student must earn a grade of C (2.0) or better in this course to obtain an Associate Degree in Criminal Justice. (45-0) A

**CJ 280 Internship in Criminal Justice 3 Sem Hrs**  
Prerequisite: Minimum 15 credits Criminal Justice courses and permission of faculty. Field placement in a criminal justice setting (police department, court, juvenile center, etc.). An attempt will be made to find field education placements compatible with students' interests and agency needs. (10-160) SD

**CJ 290-299 Special Projects in Criminal Justice O**

## Computer Numerical Control Courses ♦♦♦♦

**CNC 160 Computer Numerical Control Programming I 3 Sem Hrs**  
Prerequisites: MS 114 or SKTR 181, and MTH 103 or MT 110 or SKMA 103, or basic knowledge of machining processes and trigonometry. Primary emphasis will be on manually programming machines with various capabilities, including absolute and incremental positioning systems; tab sequential, word address, and menu driven formats; and machines with two-, three-, four-, and five-axis control. Secondary emphasis on computer assisted programming. Credit may be earned in CNC 160 or SKCN 160 but not in both. (45-0)

**CNC 161 Computer Numerical Control Programming II 3 Sem Hrs**  
Prerequisites: CNC 160 or SKCN 161. Advanced training in computer assisted programming methods for computer numerical control machines. Various programming languages will be taught with emphasis placed on Compact II. Credit may be earned in either CNC 161 or SKCN 161 but not in both. (45-0)



**CNC 201 CNC Tooling and Special Setups****2 Sem Hrs**

Prerequisite: MS 114 or basic knowledge of machining processes. Primary emphasis will be on carbide insert selection, cutting speed, feed, tool geometry, surface finish, and workpiece fixturing. Secondary emphasis will be on history of cutting tools, manufacture of carbide, advanced cutting materials. (30-0) AE

**CNC 211 Mitsubishi 410 Control****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches program methodology to produce quality parts using Mitsubishi 410 EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses Saginaw Machine Systems Accu-Cell 410 two-axis flat-bed front turning center for demonstration and lab activities. Credit may be earned in CNC 211 or SKCN 211 but not in both. (0-100)

**CNC 212 Heidenhain TNC 151 Control****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches program methodology to produce quality parts using the Heidenhain TNC-151 Dialog or EIA/ISO languages, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Bridgeport Series II Interact II three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 212 or CNC 212 but not in both. (0-100)

**CNC 213 OSP 5000 LG Control****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the OSP-5000 LG EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Okuma LB-15 two-axis slant-bed rear turning center for demonstration and lab activities. Credit may be earned in SKCN 213 or CNC 213 but not in both. (0-100)

**CNC 214 Anilam GXM Control****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the Anilam GXM EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the YCM Supermax 40 three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 214 or CNC 214 but not in both. (0-100)

**CNC 215 General Numeric 10TF Control****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the General Numeric 10TF EIA/ISO and conversational languages, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the MHP MTC-3 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 215 or CNC 215 but not in both. (0-100)

**CNC 216 Mazatrol M-32/M-2 Control****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience in CAD, machine tools, CNC programming, and personal computers and DOS. Emphasizes the programming methodology for producing quality parts using the Mazak M-32/M-2 Conversational programming language with secondary emphasis on tooling setups, part setups, and machining. Uses a Griffo Brothers, Inc. software package including: GB\DataEntry M-32, GB\GeoEntry M-32, GB\DataTransfer, GB\DataPrint M-32, and GB\DataTranslate M-32. Utilizes Delta College's Mazak VQC-15/40 M-2 four-axis double-column vertical machining center for program testing as well as employer's CNC equipment. Credit may be earned in either SKCN 216 or CNC 216 but not in both. (0-100)

**CNC 217 JAPAX JAPT 3J Control****4 Sem Hrs**

Prerequisites: CNC 212 or SKCN 212, or CNC 214 or SKCN 214, or CNC 216 or SKCN 216, or prior experience. Teaches the programming

methodology for producing quality parts using the JAPT 3J EIA/ISO language, including wire alignment, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Japax LV3 four-axis wire electrical discharge machine (EDM) for lab and demonstration. Credit may be earned in SKCN 217 or CNC 217 but not in both. (0-100)

**CNC 218 Boston Digital SPC-II Control****4 Sem Hrs**

Prerequisite: CNC 216 or SKCN 216, or prior experience. Teaches programming methodology to produce quality parts using the Boston Digital SPC-II EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Boston Digital BostoMatic 1000 five-axis vertical machining system for lab and demonstration. Credit may be earned in SKCN 218 or CNC 218 but not in both. (0-100)

**CNC 221 Concept****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work, operating on a PC and able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Concept programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center, or wire EDM. Credit may be earned in SKCN 221 or CNC 221 but not in both. (0-100)

**CNC 222 E Z Cam IV****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for 2-D mill work, operating on a PC and downloading to the Heidenhain TNC-151 control on the Bridgeport Series II Interact II three-axis milling machine. Teaches the creation of error free part programs using the E-Z CAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill. Credit may be earned in SKCN 222 or CNC 222 but not in both. (0-100)

**CNC 223 TM APT GI****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work, operating on an Okuma TM-APT-G programming terminal downloading to the OSP-5000 LG control on the Okuma LB-15 turning center. Emphasizes the creation of error free part programs using the TM-APT-GL programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center. Credit may be earned in SKCN 223 or CNC 223, but not both. (0-100)

**CNC 224 Anicam****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work and three-axis mill work, operating on a PC and downloading to the Anilam GXM control on the YCM Supermax 40 milling machine, the General Numeric 10TF control on the MHP MTC-3 turning center, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Anicam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center or mill. Credit may be earned in SKCN 224 or CNC 224 but not in both. (0-100)

**CNC 225 Mastercam****4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for up to four-axis lathe work, up to five-axis mill work, and up to four-axis wire EDM work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, JAPT 3J control on the Japax wire EDM, as well as some other machining equipment. Emphasizes the creation of error free part



programs using the Mastercam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in SKCN 225 or CNC 225 but not in both. (0-100)

#### **CNC 226 CAM M 32/M 2**

**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches programming methodology to produce error free programs using the Mazak M-32/M-2 EIA/ISO programming language on a PC with secondary emphasis on tooling setups, part setups, machining, and downloading to the Mazak VQC-15/40 M-2 four-axis double column vertical machining center using the Mazak CAM M-2 Programming software. Credit may be earned in SKCN 226 or CNC 226 but not in both. (0-100)

#### **CNC 227 XL/NC**

**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work operating on an PC downloading to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the XL/NC programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 227 or CNC 227 but not in both. (0-100)

#### **CNC 228 Nicam IV**

**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. CNC 161 or SKCN 161 is recommended. Uses off-line programming software for up to four-axis lathe work and up to four-axis mill work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the NICAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system. Credit may be earned in SKCN 228 or CNC 228 but not both. (0-100)

#### **CNC 229 Expedite 3-D Programming**

**4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. CNC 161 or SKCN 161 is recommended. Teaches off-line programming software for up to four-axis lathe work and up to five-axis mill work, operating on a PC and able to download to the SPC-II control on the BostoMatic machining system, as well as other machining equipment. Emphasizes the creation of error free part programs using the Expedite 3-D programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 229 or CNC 229, but not both. (0-100)

#### **CNC 230 ACU-CARV**

**4 Sem Hrs**

Prerequisites: MS 115, CAD 114, CNC 161 and CNC 201. An off-line programming software for up to five-axis wire EDM work. Operates on a Club Tower Hawk 486/50 computer and is able to download to the JAPT 3J control on the Japax wire EDM, SPC-II control on the BostoMatic machining system, and other prismatic machining equipment. Primary emphasis on the creation of error-free part programs. (0-100)

#### **CNC 235 MHP Flexible Machining Cell**

**4 Sem Hrs**

Prerequisite: CNC 225 and ROB 101. The machine used will be the MHP MTC-3 two-axis slant-bed rear turning center, Fanuc #00 robot and carousel. Student will have a rewarding hands-on experience in automated machining. Primary emphasis will be on all aspects of producing quality parts — including EIZ/ISO or conversational programming of the turning center, plus programming of the robot and carousel. Setting up of the machine tooling, parts, and carousel fixtures will be performed. Secondary emphasis will be on parameters and maintenance. (0-100) AE

#### **CNC 251 Mitsubishi 410 Control Advanced**

**4 Sem Hrs**

Prerequisite: CNC 211 or SKCN 211, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Mitsubishi 410 EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Saginaw Machine Systems Accu-Cell 410 two-axis flat-bed front turning center for lab and demonstration. Credit may be earned in SKCN 221 or CNC 221 but not in both. (0-100)

#### **CNC 252 Heidenhain TNC 151 Control Advanced**

**4 Sem Hrs**

Prerequisite: CNC 212 or SKCN 212, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Heidenhain TNC-151 Dialog or EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Bridgeport Series II Interact II three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 222 or CNC 222 but not in both. (0-100)

#### **CNC 253 OSP 5000 LG Control Advanced**

**4 Sem Hrs**

Prerequisite: CNC 213 or SKCN 213, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the OSP-5000 LG EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis is on parameters and maintenance. Uses the Okuma LB-15 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 223 or CNC 223 but not in both. (0-100)

#### **CNC 254 Anilam GXM Control Advanced**

**4 Sem Hrs**

Prerequisite: CNC 214 or SKCN 214, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Anilam GXM EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the YCM Supermax 40 three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 224 or CNC 224 but not in both. (0-100)

#### **CNC 255 General Numeric 10TF Control Advanced**

**4 Sem Hrs**

Prerequisite: CNC 215 or SKCN 215, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the General Numeric EIA/ISO and conversational control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the MHP MTC-3 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 225 or CNC 225 but not in both. (0-100)

#### **CNC 256 Mazatrol M 32/M 2 Control Advanced**

**4 Sem Hrs**

Prerequisite: CNC 216 or SKCN 216, or equivalent programming experience. Teaches canned cycles, subprograms, and programming from CAD files using the Mazak M-32/M-2 conversational programming language with secondary emphasis on parameters and maintenance. Uses the Mazak VQC-15/40 M-2 four-axis double column vertical machining center for lab and demonstration. Credit may be earned in SKCN 256 or CNC 256 but not in both. (0-100)

#### **CNC 257 JAPAX Japt 3J Control Advanced**

**4 Sem Hrs**

Prerequisite: CNC 217 or SKCN 217, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the JAPT 3J EIA/ISO control, including wire alignment, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Japax LV3 four-axis wire electrical discharge machine (EDM) for lab and demonstration. Credit may be earned in SKCN 227 or CNC 227 but not in both. (0-100)

#### **CNC 258 Boston Digital SPC-II Control Advanced**

**4 Sem Hrs**

Prerequisite: CNC 218 or SKCN 218, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the Boston Digital SPC-II EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the BostoMatic 1000 five-axis vertical machining system for lab and demonstration. Credit may be earned in SKCN 228 or CNC 228 but not in both. (0-100)



**CNC 261 Concept Advanced****4 Sem Hrs**

Prerequisites: CNC 221 or SKCN 221, or equivalent programming experience. Teaches the advanced powers of Concept software for more intricate programming of two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work, operating on a PC able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Concept programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center, or wire EDM. Credit may be earned in SKCN 261 or CNC 261 but not both. (0-100)

**CNC 262 EZ Cam IV Advanced****4 Sem Hrs**

Prerequisites: CNC 222 or SKCN 222, or equivalent programming experience. Teaches the advanced powers of E-Z CAM IV software for more intricate programming of 2-D mill work, operating on a PC and downloading to the Heidenhain TNC-151 control on the Bridgeport Series II Interact II three-axis milling machine. Emphasizes the creation of error free part programs using the E-Z CAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill. Credit may be earned in SKCN 262 or CNC 262 but not both. (0-100)

**CNC 263 TM-APT-GL Advanced****4 Sem Hrs**

Prerequisites: CNC 223 or SKCN 223, or equivalent programming experience. Teaches the advanced powers of TM-APT-GL software for more intricate programming of two-axis lathe work, operating on an Okuma TM-APT-G programming terminal and downloading to the OSP-5000 LG control on the Okuma LB-15 turning center. Emphasizes the creation of error free part programs using the TM-APT-GL programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center. Credit may be earned in SKCN 263 or CNC 263 but not both. (0-100)

**CNC 264 Anicam Advanced****4 Sem Hrs**

Prerequisites: CNC 224 or SKCN 224, or equivalent programming experience. Teaches the advanced powers of Anicam software for more intricate programming of two-axis lathe work and three-axis mill work, operating on a PC and downloading to the Anicam GXM control on the YCM Supermax 40 milling machine, the General Numeric 10TF control on the MHP as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Anicam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center or mill. Credit may be earned in SKCN 264 or CNC 264 but not both. (0-100)

**CNC 265 Mastercam Advanced****4 Sem Hrs**

Prerequisites: CNC 225 or SKCN 225, or equivalent programming experience. Teaches the advanced powers of Mastercam software for more intricate programming of up to four-axis lathe work, up to five-axis mill work, and up to four-axis wire EDM work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, JAPT 3J control on the Japax wire EDM, as well as other machining equipment. Emphasizes the creation of error free part programs using the Mastercam programming language, including part geometry, tool path, and debugging with secondary emphasis on downloading a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in SKCN 265 or CNC 265 but not both. (0-100)

**CNC 266 Advanced Cam M-32/M-2****4 Sem Hrs**

Prerequisites: CNC 226 or SKCN 226, or equivalent experience. Teaches the use of macros, macro programming methodology, macro call statements, and nesting using the Mazak M-32/M-2 EIA/ISO programming language with secondary emphasis on parameters and maintenance. Software is ASCII text editor and a Griffio Brothers, Inc. GB\DataEntry M-32, GB\GeoEntry M-32, GB\DataTransfer, GB\DataPrint M-32, and GB\DataTranslate M-32 running on a PC. Uses the Mazak VQC-15/40 M-2 four-axis double column vertical machining center for demonstration and lab. Credit may be earned in SKCN 266 or CNC 266 but not both. (0-100)

**CNC 267 XL/NC ADVANCED****4 Sem Hrs**

Prerequisites: CNC 227 or SKCN 227, or equivalent programming experience. Teaches advanced powers of the XL/NC software for intricate programming of two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work operating on a PC able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the XL/NC programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 267 or CNC 267 but not both. (0-100)

**CNC 268 Nicam IV Advanced****4 Sem Hrs**

Prerequisites: CNC 228 or SKCN 228, or equivalent programming experience. Teaches the advanced powers of the NICAM IV software for intricate programming of up to four-axis lathe work and up to four-axis mill work, operating on a PC and downloading to the S2PC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the NICAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of programs to the turning center, mill, machining center/system. Credit may be earned in SKCN 268 or CNC 268 but not both. (0-100)

**CNC 269 Expedite 3-D Advanced****4 Sem Hrs**

Prerequisites: CNC 229 or SKCN 229, or equivalent programming experience with the Expedite 3-D software. Teaches advanced powers of the Expedite 3-D software for intricate programming of up to four-axis lathe work and up to five-axis mill work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Expedite 3-D programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 269 or CNC 269 but not both.

**CNC 280 Acu.Carv Ads Off-Line Programming System4 Sem Hrs**

Prerequisite: CNC 270 or SKCN 270, or previous programming experience with AutoCAD and ACU.CARV softwares. Emphasizes the use of AutoCAD and ACU.CARV ADS softwares to create surfaces and tool paths for programming of up to five-axis mill work and up to four-axis wire EDM work. Includes the downloading of error-free PC created programs to JAPT 3J control on the Japax wire EDM, SCP-II control on the BostoMatic machining system, as well as some other prismatic machining equipment. Credit may be earned in CNC 280 or SKCN 280 but not in both. (0-100)

**CNC 284 CNC Practicum****4 Sem Hrs**

Prerequisite: CNC 21X on the machine used for the practicum. Students use actual working drawings of their own or supplied by instructor to program, setup, and machine a sample lot of parts to simulate a production run. (0-100) AE

**CNC 290-299 Special Projects in Computer Numerical Control O****Computer Science Courses ♦♦♦♦♦♦♦♦♦♦**

Course prerequisites are stated in terms of Delta courses or the number of years of high school mathematics or computer science courses and are intended to insure that students choose the appropriate computer science course. Individuals may have a background equivalent to a state prerequisite in which case they should consult a counselor for assistance in evaluating equivalencies. Any student who feels the circumstances warrant waiving a prerequisite should consult the Mathematics and Computer Science Division Chair for approval. It is recommended that a grade of C (2.0) or better be earned in any course used as a prerequisite for a computer science course.



**CPS 108 An Introduction to SPSS****1 Sem hrs**

Prerequisite: Some statistics or research background or taking such a course, e.g., SOC 280, concurrently. Introduces the Statistical Package for the Social Sciences (SPSS), a comprehensive set of statistical tools for many types of data analysis. Emphasizes the basic procedures, commands, and tools of SPSS. Credit may be earned in SOC 281 or CPS 108 but not in both. (15-0) O

**CPS 125 Computer Literacy****3 Sem Hrs**

Introduces computers and their applications, programming and operating systems. Examines applications such as word processing, database, spreadsheet, and graphics. Includes the specialized vocabulary of computers with major emphasis on the use of Macintosh computers. May not be substituted for CIS 133. (45-0) A

**CPS 140 BASIC Programming for Math****2 Sem Hrs**

Prerequisite: MTH 111 or 119 or either concurrently. Designed to prepare students to use the BASIC language on a computer. Mathematical applications of the computer will be studied. Programming topics include arrays, functions, graphing, simulation, modularization and sorting. (30-0) A

**CPS 165 Fortran Programming****3 Sem Hrs**

Prerequisites vary for program of study: Technology: MTH 113, Business: MTH 120, Engineering: MTH 151; prerequisite courses may also be taken concurrently. Introduces the FORTRAN programming language as an aid to problem solving. Emphasizes solving scientific or mathematical problems. Requirements include writing, debugging and executing several programs. (45-0) A

**CPS 171 Computer Science I****3 Sem Hrs**

Prerequisites: MTH 151 or four years of high school-college preparatory mathematics. An introduction to problem solving and algorithm development using the Pascal language. Topics include: program design and development, Pascal control structures (FOR, CASE, REPEAT, WHILE, IF THEN ELSE), arrays, and records. (45-0) A

**CPS 271 Computer Science II****3 Sem Hrs**

Prerequisite: CPS 171 OR both CIS 143 and MTH 151. Continuation of the programming concepts introduced in CPS 171 with emphasis on data structures and algorithm design. Other topics covered include an introduction to files, recursion, internal search and sort methods, and graphics. A team approach to large projects will be introduced. (45-0) W

**CPS 281 Computer Literacy for Educators****3 Sem Hrs**

An exposure to computers and their applications. Emphasis will be placed on types of software, software evaluations, classroom applications, computer-teacher resources, and minimal programming in LOGO and/or BASIC. Major applications for classroom management, such as word processing, spreadsheets, and data base will be examined. The understanding of the specialized vocabulary of computers will be emphasized throughout the course. (45-0) O

**CPS 286 Productivity Software for the Classroom****1 Sem Hrs**

Provides an introduction to word processor, spreadsheet, database and graphics tools and their use in a K-12 classroom. (15-0)

**CPS 280-289 Restricted Enrollment Computer Science Courses O****CPS 290-299 Special Projects in Computer Science O****Credit Union Management Courses ♦♦♦♦♦****CRM 160 Principles of Credit Unions****3 Sem Hrs**

Designed to familiarize students with basic concepts of credit unions and the Credit Union Movement. Traces the historical development of credit unions as non-profit, member-owned financial cooperatives, and deals with operational, regulatory, legal, leadership, risk management and ethical considerations. Emphasizes credit union similarities with and differences from other categories of financial institutions. Note: Final examination will qualify for CCUE credit for those also enrolled in CCUE course #100. (45-0) F

**CRM 201 Credit Union Financial Counseling****3 Sem Hrs**

Focuses on responsibility of the credit union toward member as customer and owner. Emphasizes role of planning in any counseling exercise, and works toward satisfaction of member needs through listening, exploring skill development, problem-solving and decision-making. Looks at financial planning on a personal and family level, including retirement and estate planning. NOTE: Final examination will qualify for CCUE credit for those also enrolled in CCUE course #800. (45-0) F

**CRM 212 Credit Union Accounting****3 Sem Hrs**

Prerequisite: ACC 211 with a C (2.0) minimum grade. Includes a study of credit union corporate basic theory and methodology, reporting of changes in financial position, analysis of various reserve accounts, and accounting data as used in performance measurement, regulatory compliance, decision making, planning, and control. Note: Final examination will qualify for CCUE credit for those also enrolled in CCUE course #400. (45-0) W

**Chemical Technology Courses ♦♦♦♦♦♦♦♦****CT 100 Introduction to Chemical Technology****2 Sem Hrs**

Introduces the Chemical Technology student to the study of science, scientific method, and the role and scope of duties of the Chemical Technologist. Includes technical writing and resume preparation will be included along with study skills and attitudes necessary for the study of science. (30-0)

**Dental Assisting Courses ♦♦♦♦♦♦♦♦****DA 110 Clinical Dental Assisting I****6 Sem Hrs**

Provides the opportunity to develop the skills utilized in chairside assisting for general clinical procedures. The theory and manipulation of dental materials will be integrated as they apply to these procedures. (45-90) FD

**DA 113 Oral Anatomy and Physiology****4 Sem Hrs**

A study of the basic structures and physiology of the oral cavity and head and neck. Included will be oral histology, embryology, and pathology as they relate to the development of the dental structure. (60-0) FD

**DA 120 Dental Assisting II****6 Sem Hrs**

Prerequisite: Completion of DA 110, DA 113, BIO 102, and HSC 140 with a "C" (2.0) minimum grade in each. The theory and application of the recognized dental specialties as well as the theory and manipulation of pertinent dental materials will be explored. Field trips and dental assisting assignments in the Dental Hygiene Clinic will be required. (45-90) WD

**DA 123 Dental Radiology****4 Sem Hrs**

Prerequisite: Completion of DA 110, DA 113, BIO 102, and HSC 140 with a "C" (2.0) minimum grade in each. Emphasizes principles of radiation physics, factors affecting radiographic images, biological effects or radiation, protective measures and responsible use of x-rays and operation of equipment. Includes laboratory practice in application of commonly used dental radiographic procedures. Students must supply own patients to complete course requirement. (30-60) WD

**DA 126 Dental Laboratory Procedures****1 Sem Hr**

Prerequisites: Completion of DA 110, DA 113, BIO 102, and HSC 140 with a "C" (2.0) minimum grade in each. The manipulation of impression materials and gypsum products. Field trips may be required. (0-30) WD

**DA 127 Dental Health and Nutrition****2 Sem Hrs**

Prerequisite: Completion of DA 110, DA 113, BIO 102, and HSC 140 with a "C" (2.0) minimum grade in each. Oral hygiene, general and applied nutrition as well as patient motivation techniques will be covered. Dental health projects may be required. (30-0) WD



## 2 Sem Hrs

Prerequisites: Completion of DA 120, DA 123, DA 126, DA 127, and BIO 101 with a "C" (2.0) minimum grade in each. Designed to provide knowledge and skills needed to perform expanded functions, as permitted by the current rules and regulations of the Department of Licensing and Regulations and the Michigan State Board of Dentistry. (15-37.5) SD

## 3 Sem Hrs

Prerequisite: Completion of DA 120, DA 123, DA 126, DA 127, and BIO 101 with a minimum "C" (2.0) grade in each. Emphasizes fundamental office skills in managing patient and business records, handling the telephone and visitors, controlling the appointment book, and processing dental claim forms. Basic financial procedures and computer usage will be included. (45-) SD

## 7 Sem Hrs

Prerequisite: Completion of DA 128 and DA 129 with a "C" (2.0) minimum grade in each. Students will be assigned to local dental care facilities and under supervision will perform chairside assisting techniques, laboratory procedures, and dental office management skills. (0-320) SD

## 2 Sem Hrs

Prerequisite: Completion of DA 128 and DA 129 with a "C" (2.0) minimum grade in each. Concurrent enrollment in DA 130. Emphasis will be on developing professional behaviors and improving communication skills. (30-0) SE

**4 Sem Hrs**

**Prerequisite:** Knowledge of dental anatomy and terminology and one year of full-time work experience as a chairside dental assistant. The theory of radiation characteristics, production, protection and exposure effects as well as the practical application needed to produce diagnostic radiographs will be discussed and practiced. Students must provide their own patients for laboratory time. (30-60) O

## 2 Sem Hrs

Prerequisite: Completion of an Accredited DA Program. Designed to provide knowledge and skills needed to perform expanded Dental Assisting functions, as permitted by the current rules and regulations of the Michigan Department of Licensing and Regulations and the State Board of Dentistry.(15-37.5) O

## DA 290-299 Special Projects in Dental Assisting O

## Dental Hygiene Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

## 2 Sem Hrs

**Prerequisite:** Admission to the Dental Hygiene Program. Introduces the theory and applications of procedures and skills necessary to control infectious agents. Techniques for proper interviewing and reviewing of medical histories will be presented. Opportunities to practice Universal Precautions for the patient, professional, environment and facilities will be provided. (15-30) FD

## 3 Sem Hrs

**Prerequisite:** Admission to the Dental Hygiene Program. A study of the characteristics, origin, and development of fluoride, dentifrices, mouthwashes, and deposits that affect the tooth surface. Emphasis will be placed on toothbrushing, auxiliary aids and dental appliances. Provides the basic information for developing a plaque control program. (30-30) ED

## 4 Sem Hrs

**Prerequisite:** Admission to the Dental Hygiene Program. Introduces the theory and application of the various periodontal instruments and instrument sharpening skills that are necessary for proper use in the dental diagnostic and therapeutic services. The technique for taking and recording vital signs and the application of fluoride will be incorporated. Students must also complete one oral prophylaxis. (30-90) FD

## 2 Sem Hrs

**Prerequisite:** Admission to the Dental Hygiene Program. A study of nutrients and foods and their effects on general health as well as oral health. Particular emphasis will be placed upon the relevance of nutrition to the practice of preventive dentistry. (30-0) FD

## 3 Sem Hrs

**Prerequisite:** Admission to the Dental Hygiene Program. Introduces dental anatomical terminology, anatomy of oral structures, and the morphology of the human dentition. Includes the function, structure, and the arrangement of the human dentition. Laboratory sessions will develop the skills necessary for detecting possible oral cancer and occlusion problems. (30-45) FD

## 3 Sem Hrs

**Prerequisite:** Admission to the Dental Hygiene Program. A detailed study of the anatomy of the human head and neck, and their surrounding structures. Lecture and laboratory will cover basic anatomical terminology and a complete description of the skeletal system, muscular system, nervous system, lymphatic system, and the vascular system. (30-30) FD

## 2 Sem Hrs

Prerequisites: DH 110, 114, 115, 116, 117 and 118 each with C (2.0) minimum grade. The student must understand the biology of the periodontium; the etiology; pathology, and epidemiology of periodontal diseases, and the prevention and treatment of periodontal diseases. (30-0) WD

## 2 Sem Hrs

Prerequisites: DH 110, 114, 115, 116, 117 and 118 each with C (2.0) minimum grades. The study of the embryologic development of the oral cavity. The student will be able to identify and classify abnormal conditions of the oral cavity and supporting structures. A microscopic study of the histology of the human dentition and the surrounding supporting structures will be included in the course content. (30-0) WD

## 3 Sem Hrs

**Prerequisites:** DH 110, 114, 115, 116, 117 and 118 each with C (2.0) minimum grade. The theory and techniques needed to produce diagnostic radiographs will be provided. Includes radiation characteristics, production, protection and exposure effects. Examination techniques will be practiced during laboratory time. Students must provide their own patients for radiographs taken during laboratory sessions for diagnostic purposes. (30-45) WD

## 3 Sem Hrs

Prerequisites: DH 110, 114, 115, 116, 117 and 118 each with C (2.0) minimum grade. Introduces the student to drugs and anesthetic agents commonly used in the dental practice, including the origin of drugs, their physical and chemical properties, and their preparation. Methods of administration and biological effects of drugs will be covered. (45-0) WD

## 6 Sem Hrs

**Prerequisite:** DH 110, 114, 115, 116, 117 and 118 each with C (2.0) minimum grade. The proper use of the appropriate instruments, tray setups, fluoride application, oral disease control and tissue evaluation will be incorporated into clinical hours. Fundamentals of treatment planning, recall systems, techniques for handling patients with special needs, and methods to evaluate tissue conditions will be included in the lectures. Clinical patient requirements will be specified. (30-120) WD

## 2 Sem Hrs

**Prerequisites:** DH 120, 122, 123, 124, & 125 each with C (2.0) minimum grade. Introduces the theory of amalgam polishing ultrasonic scaling, team concepts, and the hygienist's duties in myofunctional therapy. (30-0) SD

## 4 Sem Hrs

**Prerequisites:** DH 120, 122, 123, 124, 125 each with C (2.0) minimum grade. Refines the skills learned from previous courses and provides the opportunity to demonstrate the techniques of advanced instrumentation including root planing, amalgam polishing, and ultrasonic scaling. Clinical patient requirements will be specified. (0-120) SD

## 1 Sem Hr

**Prerequisites:** DH 131 and 135 each with a C (2.0) minimum grade. The study of the techniques and philosophies of handling patients with special needs. (15-0) FD

## 1 Sem Hr

**Prerequisites:** DH 131 and 135 each with a C (2.0) minimum grade. A study of the various dental specialties and the role of the dental hygienist within these areas. (15-0) FD



## 3 Sem Hrs

Prerequisite: DH 131 and 135 with C (2.0) minimum grade. The study of the process, identification and classification of oral diseases. Emphasis will be placed on the prevention of the diseases within the scope of responsibility and practice of the dental hygienist. (45-0) WD

## 4 Sem Hrs

**Prerequisite:** DH 131, DH 135 with C (2.0) minimum grade. The theory and practical portion is concerned with the properties, manipulation and clinical application of dental materials and devices used in dental procedures. (45-45) FD

## 6 Sem Hrs

Prerequisite: DH 131 and 135 each with a C (2.0) minimum grade. Provides the opportunity to practice and increase the students' proficiency skill levels learned from previous Dental Hygiene courses. Clinical patient requirements will be specified.(0-180) FD

## 2 Sem Hrs

Prerequisite: DH 131, 135 with C (2.0) minimum grade. Provides the theoretical base for assessing, designing implementing, and evaluation dental health improvement programs. (30-0) FD

## 2 Sem Hrs

**Prerequisites:** DH 211, 212, 213, 214, 215, & 216 each with a C (2.0) minimum grade. The study of the history and organizational structure of the A.D.H.A.; ethics and jurisprudence of the dental hygiene professional. The hygienist role in office management and techniques for job selection will be included. (30-0) WD

## 7 Sem Hrs

Prerequisite: DH 211, 212, 213, 214, 215, and 216 each with a C (2.0) minimum grade. Provides the opportunity to perfect hygiene skills learned in all previous Dental Hygiene courses, plus learn advanced instrumentation and pit and fissure application skills. Clinical patient requirements will be specified. (15-180) WD

## 2 Sem Hrs

Prerequisites: DH 211, 212, 213, 214, 315, & 216 each with a C (2.0) minimum grade. The application of pit and fissure sealants; rubber dam; demonstrate chairside assisting techniques; placement and removal of intercoronal temporary fillings and crown; removal of sutures; pulp vitality testing; and intraoral photography will be included. The student must perform these duties at the State of Michigan clinical competency levels. (15-45) WD

## 1 Sem Hr

Prerequisite: DH 211, 212, 213, 214, 215, & 216 each with a C (2.0) minimum grade. Based upon the student assessment of dental health need for one or more target populations, students will design, implement and evaluate dental health improvement programs. NOTE: This course may require evening, weekends, and holiday assignments. (0-45) WD

**DH 290-299 Special Projects in Dental Hygiene O**

## Drafting Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

## 1 Sem Hr

A course designed to develop basic drafting skills for people entering the field of Graphic Arts. Includes proper use of equipment, drawing and measuring lines, measuring space, sheet layout and orthographic projections. (5-10) FDWD

## 4 Sem Hrs

Recommended for students with no drafting experience or less than two years high school drafting. Course covers spatial visualization and basic concepts of drafting. Sketching, orthographic and multi-view drafting, lettering, use of instruments, sections and conventions, isometrics, and an introduction to dimensioning. (15-105) FW

## 3 Sem Hrs

**Prerequisite:** Successful completion of at least one year of high school drafting as verified by a Delta College counselor. Elements of drafting for technicians. Lettering standards, use of instruments and equipment, orthographic and multi-view drafting and sketching, sections and conventions, axonometric and oblique drawing. (15-75) FW

## 3 Sem Hrs

Prerequisite: DRF 104 or 105, and CAD 114. Training in manual and computer-aided methods of making sets of industrial working drawings. Successful completion requires students to demonstrate skills in organizing and making views, dimensions, notes, and specifications for simple parts and assemblies. The application of graphic symbols, view revolution, and auxiliary projections are introduced by both manual and computer aided methods. (30-30) FW

## 2 Sem Hrs

Course designed for machine operators, welders, or assemblers with little or no blueprint reading experience. Includes manipulation of basic fractions and decimals and as applied to the reading of blueprints, reading measuring instruments, basic geometric figures, drafting and blueprinting procedures, basic orthographic projection auxiliary and sectional views, detail and assembly drawings, dimensioning and tolerances, title block, change block, list of materials, and notes. Credit may be earned in DRF 120 or WELD 120 but not both. (30-0) WE

## 2 Sem Hrs

Prerequisite: DRF 120 or basic knowledge of blueprint reading. Course designed specifically for welders and fabricators working with welding drawings. A more in-depth treatment of basic blueprint information, orthographic projection, assembly drawings, and geometric tolerancing. Emphasis placed on welding symbols and welding drawings. Credit may be earned in DRF 122 or WELD 122 but not both. (30-0) WE

## 2 Sem Hrs

Prerequisite: DRF 120 or permission of instructor. Course is designed for machinists, lathe operators, mill operators, and grinder operators. More in-depth treatment of working drawings, supplementary views and information, materials and processes commonly found in machining drawings is covered. (30-0) WE

## 2 Sem Hrs

Prerequisite: DRF 120 or permission of instructor. Primary emphasis is on geometric symbols used in place of written notes on industrial drawings including datum, symbols, and other items tolerancing to the geometry of the part. Credit may be earned in either DRF 128 or SKDR 128 but not both. (30-0) WS

## 2 Sem Hrs

Prerequisite: DRF 128. A continuation of DRF 128, with a more in-depth study of positional tolerance, datums, form tolerance, gaging and verifying principles with advanced applications. (30-0) O

## 3 Sem Hrs

A study of the graphic language applied to mechanical and civil design, consisting of multiview and isometric drawing and descriptive geometry. Emphasis placed on developing skills in use of instruments, lettering, principles of orthographic projection, multiview drawings, isometric drafting, sectioning, auxiliary views, revolutions, developments, ANSI dimensioning, ANSI tolerancing, annotation and descriptive geometry. Course is designed for engineering majors. Credit can be earned in DRF 155 or EGR 165 but not in both. (30-60) O

## 3 Sem Hrs

Prerequisites: MT 110 or MATH 103 and DRF 104 or DRF 105 or DRF 155. Emphasis on space visualization and processes of solution. Problems comprise, combinations of points, lines, planes, intersections, developments, warped surfaces, true angles, true size and shape, vectors, shades and shadow, and conics. (15-75) WD (FE-Every other year)



6 Sem Hrs

Prerequisites: DRF 256. (MT 205 may be taken concurrently.) Specific assigned problems requiring knowledge in the use of design layouts. Development of skills in the organization and presentation of complete sets of working drawings: details, assemblies, and related specifications. Apply knowledge of a variety of manufacturing and fabrication processes. Use of standards, manufacturers' and suppliers' catalogs and engineering handbooks. Introduction to drafting symbols, tabulation techniques, and engineering office procedure. (30-120) SD (WE-Every other year)

## DRF 290-299 Special Projects in Drafting O

## Economics Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

3 Sem Hrs

A survey of the operation of the American economy as a mixed economy and the principles of contemporary economic analysis that underline its operation. Credit may be earned in either ECN 111 or 221 but not both. (45-0) O

3 Sem Hrs

Deals with everyday application of economic principles to personal decision-making and examines the role of the consumer in the market place and some of the pitfalls encountered. (45-0) O

4 Sem Hrs

The study of how the American economics system works to produce and distribute goods and services given limited resources. The following topics are covered: Supply and demand analysis; Inflation, unemployment and grow national product; The activities and impact of the consumer, business and government on the economy; interest rates, money and banking; and the business cycle. Credit may be earned in either ECN 111 or 221 but not both. (60-0) A

4 Sem Hrs

**Prerequisite:** ECN 221. A continuation of ECN 221 with emphasis on the individual units in the economy. The following topics are covered: further study of supply and demand; business behavior based on industry structure; regulated business (utilities); anti-trust laws; unions and labor laws; international trade and finance; and selected current problems. (60-0) A

4 Sem Hrs

An analysis of foreign economic systems, including the private-public mix, role of international trade, foreign solutions to common economic problems, and specific timely topics. Includes classroom lectures, individual consultation and international field of study. Expenses for field study must be borne by the student. By prior arrangement with appropriate faculty, students may also take International Studies in the following disciplines: GEO 268, GB 268, SOC 268, (60-0) O

## ECN 290-200 Special Projects in Economics O

## Education Courses ♦♦♦♦♦

3 Sem Hrs

Prerequisite: For pre-elementary or special education students: (1) ENG 111 with minimum of C (2.0); (2) minimum of 24 credits and overall 2.0 gpa; (3) minimum of 2 courses from the following and at least C+ in each: ART 105, ART 113, ED 101, ENG 251, MTH 110, MUS 100, PEH 266, PSY 223. For pre-secondary education students: (1) minimum of 24 credits with overall 2.0 gpa; (2) ENG 111 with minimum of C (2.0); (3) minimum of 2 courses in the teaching major or minor and at least C+ in each. A comprehensive survey of teaching—to help the student understand the everyday work of a teacher. One day a week will be spent in a school observing and aiding a teacher. Also, students meet for one hour a week for instruction on techniques, for assessment of their work, for information concerning career choices and for sharing their experiences with each other. (15-90) A

3 Sem Hrs

For present or prospective teachers of the non-typical child. Emphasized the characteristics indigenous to the exceptional child. An overview of the educational needs of and approaches to exceptional children will be included to give the students an opportunity to study the various programs offered. (45-0) O

3 Sem Hrs

A survey of many types of literature for the pre-school child with emphasis on book selection, correlation with other language arts, and developing techniques of presentation, oral reading and story telling. (45-0) FW

ED 210 Introduction to Teaching as a Second Language2 Sem  
Hrs

A basic introductory course on the principles and procedures in teaching English to non-native speakers at all levels. Designed for professional or volunteer ESL instructors with little or no previous experience in this field. (30-0) O

2 Sem Hrs

Examines the educational needs of older adults, the role of the older learner, and typical programs. Emphasis is given to planning and development of educational services. (30-0) O

2 Sem Hrs

Examines the problems and prospects of retirement. The uses of educational materials are emphasized as retirement planning tools. A variety of techniques and materials intended for retirement preparation are studied, and students are required to participate in some pre-retirement sessions. (30-0) Q

## ED 290-299 Special Projects in Education O

## Electronic Engineering Technology Courses ♦♦

1 Sem Hr

**Prerequisite:** CNC 230. Builds advanced skill in ACU.CARV software for more intricate programming of up to five-axis mill work and up to four-axis wire EDM work. Emphasizes creation of error-free part programs—including part geometry, tool path, debugging, and downloading of the programs to the mill, machining center/system, or wire EDM. Also includes transfer of CAD drawings into the ACU.CARV software and generating error free part programs and tool paths. (0-100)

3 Sem Hrs

Prerequisite: High school algebra or MTH 107. A survey of the fundamentals of electricity and electronics. (30-30) O

6 Sem Hrs

Prerequisites: MTH 113 or 121, PHY 101 OR 111, and EET 131 or concurrently. Studies DC and AC circuit fundamentals including Ohm's Law, Kirchhoff's voltage and current laws. Covers component definitions, both electrical and physical, and uses Physics principals associated with the electric and magnetic fields in the development of the reactive components's behavior. Applies the circuit analysis techniques of loop and node equations; Thevenin and Norton equivalent circuits, and superposition and maximum power transfer to both DC and AC circuits. Covers tuned circuits, two port parameters and transformers. (75-30)

3 Sem Hrs

**Prerequisite:** MTH 107 or H.S. equivalent. Studies fundamental concepts of digital electronics, including the +5 volt TTL family of integrated circuits, digital number systems, Boolean algebra, Karnaugh maps, combinational logic circuits, counters, latches, flip-flops and shift registers. Introduces basic memory concepts and circuits. (30-30) FW

2 Sem Hrs

Prerequisite: MTH 107 or one year of high school algebra. Designed to develop fundamental skills in: measurement of AC/DC electrical units, bread-boarding techniques, safety, use of bench equipment, and usage of multimeters and oscilloscopes. (15-30) FW



## 3 Sem Hrs

Prerequisite: MTH 107 or equivalent. Provides a basic understanding of the technology and equipment in the broadcast field and an insight into the electrical/electronic functions of the equipment students may be required to operate. (45-0) O

## 5 Sem Hrs

Prerequisites: PHY 112 and EET 110. A study in AC and DC analysis and design of circuitry involving solid state diodes, bipolar junction transistors, field effect transistors and small-signal AC analysis models. (60-30) WE (FD-Every other year)

## 5 Sem Hrs

**Prerequisite:** MTH 211 or 161, and EET 210. Studies linear integrated circuit theory, frequency response and applications. Emphasizes use of operational amplifiers for math operations, comparators, active filters, analog to digital converters, current and voltage controlled amplifiers, and the use of power boosting techniques. Covers phase locked loops, switching and fixed voltage regulators, integrated timing circuits, and function generators. (60-30)

## 2 Sem Hrs

Prerequisite: EET 210. Examines the use of computers in the solution of electrical circuit problems. Software packages used are MICRO-CAP II and SPICE. Both active and passive problems are presented. (15-30) O

## 5 Sem Hrs

**Prerequisite:** EET 235 or 210. EET 210 can be taken concurrently. Studies industrial control logic design and application with emphasis on ladder logic, relay and T-switch logic formats. Uses Modicon micro 84 to study programmable controller logic. Covers 4-layer semiconductors (SCRS-TRIACS-UJPTS-PUTS-DIACS), their characteristics and applications. Studies application of electronic control systems to machine processes with emphasis on transducers, I/O interfaces, control processors and output drivers. (60-30)

## 4 Sem Hrs

Prerequisite: EET 210. A continuation of material presented in EET 210 with emphasis on power amplifiers, basic tuned amplifiers, linear integrated circuits, and power suppliers. (45-30) WE (FD Every other year)

## 4 Sem Hrs

Prerequisite: EET 216. Elementary principles of operation of rectifiers, amplifiers of various types, modulation, demodulation, and detection are studied. (45-30) O

## 3 Sem Hrs

**Prerequisite:** EET 120. Studies advanced digital design concepts with emphasis on laboratory experience. Includes advanced logic minimization techniques, A to D and D to A conversion, design of sequential circuits and applications, TTL and CMOS interfacing, Hamming Error-checking code, five and six variable Karnaugh Mapping, and Quine-McCluskey reduction techniques, and Fuzzy Logic fundamentals. (30-30) W

## 3 Sem Hrs

**Prerequisite:** EET 120 and EET 131. An introductory study in computer electronics emphasizing the fundamentals of microprocessor programming and interfacing. Topics include: machine and assembly language programming; functional relationships between microprocessors to keyboards, LED displays, speakers, stepper motors, and analog circuits. (30-30) WE (FD Every other year)

**3 Sem Hrs**

Prerequisite: EET 224. An advanced study in computer electronics, emphasizing advance microprocessor interfacing and programming techniques. Interfacing applications will include: digital to analog circuits programmable timer circuits, serial communication between computers, EPROM programming, video displays, printers, and magnetic storage devices.(30-30) Q

## 1 Sem Hr

Develops skill in soldering and printed circuit board fabrication and repair, using commonly accepted industrial practices. Covers safety, chemical handling, contamination of work area, grounding, materials, and waste handling. Producing a functioning printed circuit assembly is required. (8-22)

## 3 Sem Hrs

Prerequisite: EET 216 concurrently and CAD 114. Basic prototype development from proposal to final report. Include printed circuit board artwork on PC based CAD. Students undertake several class projects as well as propose a project of their own. Students will procure parts, build test, and write final report that covers the specification, operation, and troubleshooting of the unit. (15-60) WE (FD Every other year)

## 5 Sem Hrs

**Prerequisite:** MTH 113 and PHY 111 or 101, and MT 220 may be taken concurrently or as a prerequisite. An intermediate level study of DC and AC circuit fundamentals including a general introduction to industrial control concepts. Provides basic circuit laws, passive circuit components and their effects in DC & AC networks, diodes, transistors, ladder logic, integrated circuit logic. (60-30) FW

## 4 Sem Hrs

**EET 210 - Basic Instrumentation**  
Prerequisite: EET 210. A study of the components of applied instrumentation including transducers, processing systems and recorders. Mechanical, electrical, hydraulic, pneumatic, acoustical and photometric topics are covered. (45-30) O

## 5 Sem Hrs

**Prerequisite:** EET 215 and CAD 114, or permission of instructor. Builds on principles covered in EET 215 to develop skill in design of complete industrial control systems. Using ladder logic and AutoCAD, students produce computer diagrams and plots of machine control circuits with PLC's, hydraulic and pneumatic components. (45-30) Q

## 2 Sem Hrs

An introduction to basic electricity and fundamentals of basic residential/commercial building wiring. Topics include electricians' tools and safe use of tools. O

**EET 290-299 Special Projects in Electronic Engineering Technology** ○

## Engineering Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

## 1 Sem Hr

A study of Engineering as a profession as well as a career. Surveys the various fields such as Mechanical, Electrical, Civil, etc. Compares an engineer with a technologist. Reviews work responsibilities, ethics, the work environment, challenges, salaries. (15-0) A

## 1 Sem Hr

A familiarization with the procedures followed and tools used by an engineer in problem solving, analysis and design. Covers engineering languages in graphics, mathematics, and computers. (15-0) A

## 4 Sem Hrs

A study of the graphic language applied to mechanical and civil engineering design. Develops skills in orthographic projection, multi-view drawings, isometric drafting, sectioning, auxiliary views, revolutions, developments, ANSI dimensioning, and tolerancing, annotation and descriptive geometry. Uses computer-aided drafting and analysis. Credit can be earned in EGR 165 or DRF 155 but not in both. (30-60) FW

## 4 Sem Hrs

**Prerequisite:** One year of high school mechanical drafting with final grade of C (2.0) or higher. A study of the graphic language applied to mechanical design, review of multiview and isometric drafting, and the geometry of drawing. Emphasis on developing skills in using orthographic projections, sectional views, auxiliary views and revolutions, dimensioning and annotation, and descriptive geometry. Computer-aided methods in drafting and analysis are used for all topics studied. Students cannot obtain credit for both EGR 165 and EGR 166. (30-60) FW

## 3 Sem Hrs

Uses the C++ language to introduce program design and development. Develops solutions to computing problems through problem definition, algorithm design, and coding. Includes documentation screen design, and formatting of output. Credit may be earned in CIS 170 or in EGR 170 but not in both. (45-0)



## 3 Sem Hrs

Prerequisites: PHY 211 and MTH 162 (MTH 162 may be taken as a parallel course). Covers forces, components, vectors, moments, couples, methods of sections, stress in frame structures, cables, friction, first moments, products of inertia, and centroids. (45-0) O

## 3 Sem Hrs

**Prerequisite:** PHY 215. Intended as a second course in mechanics for engineers. Covers kinematics and kinetics of particles and rigid bodies in 2D and 3D. Force/acceleration, energy and momentum methods are used. Applications to machine elements and structures in mechanical engineering. (45-0) SD FE

## 4 Sem Hrs

Binary number system; Boolean algebra, Karnaugh maps, basic logic gates, combinational circuits and designs, sequential circuit design using flip-flops, counters and shift registers, digital arithmetic, memory devices and basic structures of a microprocessor. (45-30)

## 4 Sem Hrs

Prerequisite: MTH 161. Resistive circuits with independent and dependent sources, operational amplifiers, RL, RC transients, R-L-C circuits-natural and forced response, sinusoidal input and forced response. (45-30)

## Emergency Medical Technician Courses ♦♦

**EMT 101 Basic Emergency Medical Technician I 6 Sem Hrs**

This course covers all the basic techniques in emergency medical care presently considered within the responsibilities of the Basic Emergency Medical Technician (EMT). Includes dispatch, emergency victim care in a variety of situations, extrication, and transportation. (30-120) FE

## 1 Sem Hr

Must be taken concurrently with EMT 101. Provides the opportunity to observe and assist with basic emergency treatment techniques in local emergency service facilities. (0-60) F

## 1 Sem Hr

Designed to better prepare the Basic Emergency Medical Technician to cope with automobile rescue in the field. Included is practical experience with a long and short backboard, initial Patience Survey with a simulated, trapped patient, and hands-on experience with various rescue tools and techniques. The National Registry of Emergency Medical Technicians has awarded 10 points in classification 11 — Extrication course for registration credit. Course is approved by Michigan Department of Public Health, Licensing Division. (2-14) FN

**EMT 290-299 Special Projects in Emergency Medical Technician O**

## **English Courses**

**ENG 100 Introduction to College Reading and Writing5 Sem Hrs**

Provides those under-prepared for academic work in the regular composition sequence (ENG 111A, 111 and 112) with an opportunity to improve their reading and writing skills in an informal workshop atmosphere. Students will practice writing with special attention given to their particular needs, which may include organization, sentence structure and variety, vocabulary building, and essays, and stories will help students learn how to understand, interpret and apply their reading. (75-0) A

**5 Sem Hrs**

instruction and experience in the skills of reading, writing, and oral communication with emphasis on practical use. This course fulfills the college English requirements for specific technical programs. (75-0) WO

## 1 Sem Hr

Students will be provided with some basic study strategies for coping with college level work. Those presently experiencing difficulty in the different subject areas will receive individualized assistance. (15-0) O

## 2 Sem Hrs

Students will be taught to prepare written communications with emphasis on clear and direct sentence structure and separating fact from opinion. The class will present reports and letters on subjects of interest to labor. (30-0) Q

**2 Sem Hrs**

Techniques, methods of patterning, and governance by rules to achieve correct spelling. Emphasis on individual needs as determined by testing. (30-0) A

## 5 Sem Hrs

A course designed to aid the speaker of English as a second language with intermediate and advanced English language skill. Study covers grammar, pronunciation, reading skills, composition and American culture. In-class oral drills, language laboratory experience, readings in American history and out-of-class composition will be the main activities. (75-0) FW

## 2 Sem Hrs

Designed to acquaint or refresh the student with useful, basic grammatical concepts through a practice-directed program. Effective sentence structure, capitalization and punctuation rules, and the importance of detail, clarity and style will be illustrated in the context of letters, memos, reports and other forms of career-oriented communication. (30-0) A

## 4 Sem Hrs

Designed for those who need to understand, remember, and enjoy what they read. Course will include techniques for understanding new words from reading and remembering vocabulary. Special consideration will be given to the study-reading process for college-level work. (60-0) A

## 3 Sem Hrs

For people who read effectively but want to improve their ability to understand the whole process more clearly. Such a study is designed to increase comprehension and reading rate when applied to a variety of printed material. (45-0) A

## 3 Sem Hrs

Aims at developing fluent, effective, and confident writers. Students will practice the process of composing: generating ideas and shaping and evaluation their writing. Reading and language awareness will be used to further the development of their writing. (45-0) A

**ENG 111A Writing Methods/College Composition I 5 Sem Hrs**

Combines the objective of ENG III with two additional hours of special attention to particular student problems and needs in the conventions of written composition. Two of the five credit hours may be counted toward the total hours required for graduation but not toward fulfilling the English composition requirement for any curriculum or degree. (70-0) A

**3 Sem Hrs**

Prerequisite: ENG 111. Continues the development of fluent, effective, and confident writers. Students will expand their abilities and versatility in the process of composing for a range of purposes, audiences, and situations. Reading and language awareness will be further used to develop their writing. (45-0) A

## 3 Sem Hrs

Prerequisite: ENG 111. Techniques for written presentation of technical material in formal and informal reports. The emphasis will be on general principles with specific applications in conjunction with technical courses or actual job experience. (45-0) A

## 1 Sem Hr

A course for those currently working on a research paper or for those who will be writing a research paper in the future. The format will include using the library, selecting a focus for research, researching, collecting findings, assimilating ideas, planning, writing, and documenting a research paper. (15-0) O



**ENG 115 Mass Media**

Survey of mass media; role history, current problems and criticisms of the press, radio, television, film mediums; information on what is needed to qualify for job in journalism. (45-0) FW

**ENG 116 News Writing**

Prerequisite: ENG 115 or permission of instructor. Fundamental principles of gathering and writing news stories; elements of news, the lead, style, and structure of news stories; new sources and types of new stories. (30-30) W

**ENG 206 Grammar Enrichment**

Prerequisite: ENG 111 or 111A. Provide students whose basic sentence structure, usage, and punctuation are strong with an opportunity to practice these skills or to undertake further investigation of language form and varied styles. (30-0) WE

**ENG 211 Advanced Composition**

Prerequisite: ENG 112 or permission of instructor. Further practice in forms of academic writing such as the summary, report based upon research, and the analytical essay. Emphasizes writing process and examines the origins and purpose of academic discourse. Approaches such as workshops, conferencing, publication and word processing may be used at the discretion of the instructor. (45-0) FW

**ENG 212 Advanced Composition and Tutoring**

Prerequisite: ENG 112 or 113 and permission of instructor. Provides in-depth knowledge of the skills of exposition and advanced prose style through the writing and criticism of expository essays. Furthermore, students will be introduced to theory and practice of tutoring and will work with individuals in need of help in Delta's Teaching/Learning Center for 1 hour per week in addition to 3 hours of classroom work. (45-0) O

**ENG 217 Advanced Reporting**

Prerequisite: ENG 116. Detailed journalistic techniques and news gathering methods, handling important and specialized assignments in government, politics, crime and courts, education, science and environmental areas, editorial writing, reviewing and criticism of the arts, columns. Class members work on The Collegiate. (30-30) O

**ENG 218 News Editing**

Intensive training in publication style, including newspapers, magazines, the business and trade press, house organs, newsletters and specialized publications; news evaluation. Copy reading, headline writing: basic typography; journalistic responsibilities, ethics and communication laws. Class members work on The Collegiate. (30-30) O

**ENG 253 Creative Writing: Poetry**

Prerequisite: ENG 112. A course in the writing of poetry. Students are encouraged to develop their own poetry writing skills and understanding. In addition to other classroom activities, there are discussions and writing assignments. The instructor may also choose to require analysis of published poetry and criticism. (45-0) FW

**ENG 254 Creative Writing: Fiction**

Prerequisite: ENG 112. A course in the writing of fictional prose—chiefly short stories and the novel. Each student is encouraged to develop his/her own fiction writing skills and understanding. In addition to other classroom activities, there are discussions and writing assignments. The instructor may also choose to require analysis of published poetry and criticism. (45-0) F

**ENG 255 Advanced Fiction Writing**

Prerequisite: ENG 254 or permission of instructor. A continuation and development of writing abilities and interests. Students will compose short fiction and analyze each other's stories. Writing exercises and some reading of professional stories may also be included. (45-0) WO

**ENG 256 Personal Writing**

Prerequisite: ENG 112 or permission of instructor. A writing and reading course emphasizing inner exploration as a way of personal growth and expanded awareness. The central focus will be student's journal, although other avenues of personal writing such as dream logs and autobiographies and essays as aids to his/her writing and as works of literary art. (45-0) FW

**ENG 290-299 Special Projects in English O****Environmental Science Courses ♦♦♦♦♦♦♦♦****ENV 100 Environmental Regulations**

Presents an overview of the regulations that are related to environmental protection, including OSHA regulations, Clean Air Act, SARA, RCRA and similar regulations. Provides an awareness of why the regulations exist, how they are enforced, penalties for noncompliance, and practical experience in interpretation of the regulations. (Cannot be counted toward Natural Science credit). (45-0) O

**ENV 150 Field Experience in Safe Handling of Hazardous Materials**

Involves hands on training in the use of personal protective equipment, monitoring and sampling techniques, decontamination, emergency procedures, industrial spill response, confined space entry, safe transportation of hazardous materials, and other training pertinent to safe work habits. Emphasizes rationale for following specific procedure, evaluations, relative merits of equipment and instruments used, and establishing criteria for evaluation of field experience. Presented as series of modules offered through Delta College Corporate Service, all of which must be completed prior to receiving academic credit. Offered as credit for prior experience. (Cannot be counted toward Natural Science credit). (90-0) O

**ENV 230 Instrumentation for Environmental Technicians**

Prerequisite: CHM 101 or CHM 111 with C (2.0) minimum grade. Provides theory and use of the instrumentation basic to the environmental field. Emphasizes protocols for accuracy, calibration and care of instruments, safety, and record keeping. (30-30) W

**Electronic Service Technology Courses ♦♦****EST 101 Electronic Service Industry**

Surveys the electronic service and repair industry including employment considerations, electronic applications, examples of electronic systems, the future of electronics, required technical skills, and technical communications. (30-0)

**EST 133 Electronic Service I**

Prerequisite: MTH 107 and EST 101. Provides an electronic service person the theoretical foundation to maintain the service electronic equipment. Included are basic circuit laws (Ohms Law, Watts Law, Kirchhoff's Laws, etc.). (45-15) FD

**EST 135 Electronic Service II**

Prerequisite: EST 133 with C minimum grade, or permission of instructor. Continuation of EST 133. Included are more advanced concepts of electricity and electronics, the mathematical solution of D. C. circuits, and basic circuit laws, efficiency, inductance, magnetism, meters, transformers, and basic alternating current using trigonometry. (55-20) FD

**EST 137 Electronic Service III**

Prerequisite: EST 135 with C minimum grade, or permission of instructor. Continuation of EST 135. Topics include capacitance, capacitive reactance, series A.C. circuits, and multiphase systems. (55-15) FD

**EST 140 Digital Electronics I**

Prerequisite: EST 137 with C minimum grade, or permission of instructor. Fundamental concepts of digital electronics are covered. Topics include digital number systems, basic gate functions, Boolean Algebra, combinational logic systems, flip-flops, sequential logic systems, shift register systems. Concepts will be taught based upon the operation, service and repair of these systems. (30-20) WD

**EST 142 Digital Electronics II**

Prerequisite: EST 140 with C minimum grade, or permission of instructor. Continuation of EST 140. Advanced digital systems including one-shots, mono-stables, astables, timers, digital control systems, D/A circuits, A/D circuits, digital meter systems, basic memory systems, introduction to micro-processors, concepts will be taught based upon the operation, service and repair of these systems. (30-20) WD



**EST 146 Basic Microprocessor Systems** 3 Sem Hrs  
Prerequisite: EST 142 with C minimum grade, or permission of instructor. Basic study of electronic computer systems. Topics include machine and assemble language programming, functional relationships between microprocessors and the support circuits, the basics of interfacing to input and output devices. Concepts will be taught based upon the operation, service and repair of these systems. (30-30) WD

**EST 150 Electronic Devices I** 3 Sem Hrs  
Prerequisite: EST 137 with C minimum grade, or permission of instructor. Topics include fundamentals of passive devices, including diodes, zener diodes, power supply circuits, passive regulator systems clipper and clamper circuits, and bipolar junction transistors. Introduction to transistor amplification, its operation, service and repair. (30-30) SD

**EST 152 Electronic Devices II** 3 Sem Hrs  
Prerequisite: EST 150 with C minimum grade, or permission of instructor. Continuation of EST 150. Fundamental concepts of field effect transistors, insulated gate field effect transistors, metal oxide semiconductor field effect transistors, silicon controlled rectifiers, bidirectional triode, unijunction transistor, programmed unijunction transistor. Light sensitive devices, such as photo conductive cells, photo diodes, photo transistors, light-emitting diodes, and liquid crystal displays. (30-30) SD

**EST 156 Basic Electronic Systems** 3 Sem Hrs  
Prerequisite: EST 152 with C minimum grade, or permission of instructor. Continuation of EST 152. Topics will include fundamental concepts of operational amplifiers, voltage and current regulator circuits, oscillators, and waveshaping circuits. Basic transmitting, receiving and antenna systems will also be discussed. Concepts will be based upon operation, service and repair of these systems. (30-30) SD

**EST 160 Practical Electronic Servicing** 4 Sem Hrs  
Prerequisite: EST 156. Covers basic A.M. and F.M. radio receiver service procedures, including alignment and troubleshooting. The student will use a variety of test equipment including signal generators and oscilloscopes. (45-15)

## Fashion Merchandising Courses ♦♦♦♦♦♦♦♦

**FM 110 Apparel Construction and Analysis** 4 Sem Hrs  
Analysis and application of professional procedures in appraising and constructing a garment; use of a pattern; proper fabric selections; pattern layout, marking, cutting, construction, and professional finishes; advanced construction methods in collar applications; sleeve construction and lining techniques. (60-0) F

**FM 120 Apparel Tailoring** 4 Sem Hrs  
Prerequisite: FM 110 or permission of instructor. Basic clothing construction skills necessary. Areas covered include proper figure measurement and analysis, correct pattern and fabric selection for a coat or suit, pattern alteration techniques, fabric preparations, use of a test muslin, special innergarment construction techniques, construction of lapel collars, set-in sleeves, linings, and special methods of attaching fasteners to garments to achieve professional-looking apparel. (60-0) F

**FM 130 Professional Image Development** 1 Sem Hr  
Designed to aid the career-minded person in achieving greater self-confidence by maximizing social and physical personality characteristics. The student will study wardrobe planning and care; personality development as it relates to business relationships, body language and poise, care and grooming of skin and hair. (15-0) O

**FM 150 History and Dynamics of Fashion** 3 Sem Hrs  
An introductory course to the clothing fashion industry. A study of the impact and interrelationships of costume and culture of western civilization from ancient times to the present. Emphasis will be placed on historic designer. The components of fashion, which include line, form, color, texture and silhouette, as well as construction details, will be explored. (45-0) F

**FM 151 Display** 3 Sem Hrs  
Prerequisite: ART 115 and FM 170 or ID 100, or permission of the instructor. Display, as a major component of sales promotion, is fully explored in this course. Color and basic design principles will be studied in terms of their application to display. Analysis of the function, types and tools of display will be included. Students will design and coordinate window and interior displays. The steps in planning and coordination sales promotions will be covered. Emphasis will be placed on learning how to plan, produce and evaluate effective displays. (45-0) FD WE

**FM 155 Textiles** 3 Sem Hrs  
A study of natural and man-made fibers, their properties and unique characteristics. Identification of fabrics used in wearing apparel and interior decoration; fabric production, performance and use; final processes and finishes; the study of weaves, pattern and color. (45-0) F

**FM 170 Fundamental Theories of Fashion Design and Merchandising** 3 Sem Hrs  
A study of fashion merchandising, with emphasis on contemporary designers. A study of primary, secondary, and consumer markets is explored. Includes the relationship of sizes; figure types and styling; fashion pricing and market comparisons; and the forces influencing fashion. (45-0) W

**FM 210 Apparel Pattern Drafting and Design** 4 Sem Hrs  
Prerequisite: FM 110 or equivalent. Basic principles of pattern drafting; pattern alterations through the flat pattern and pivot methods; elements of a proper garment fit utilizing test muslins; trade information of figure types, sizing, and pattern terminology. The basic sloper will be used in designing and drafting hip length slopers, collars, sleeves, bodices, and skirts. (60-0) W

**FM 220 Advanced Apparel Tailoring** 4 Sem Hrs  
Prerequisite: FM 120 with a minimum grade of C (2.0). Includes couturier design and construction techniques, constructing a garment from a designer pattern choice utilizing couturier structural and decorative details. (60-0) W

**FM 230 Applied Apparel Design** 3 Sem Hrs  
Prerequisite: FM 110 or equivalent. This course will cover art techniques suitable for apparel design, including fabric dyeing, quilting, stitchery, applique, and macrame. Apparel will be designed and constructed incorporating the above techniques. (30-30) W

**FM 240 Fashion Coordination** 3 Sem Hrs  
Prerequisite: FM 170. Fashion coordination responsibilities in the primary, secondary, auxiliary, and retail apparel markets will be explored in this course. Areas that will be covered include sources of fashion information, how it is analyzed, and major fashion accessory to apparel. Practical experience in preparing and giving several types of fashion presentations to live audiences is of major importance. (45-0) W

**FM 245 Advanced Textiles** 3 Sem Hrs  
Prerequisite: FM 155. An in-depth study of man-made fibers, including flooring materials and other types of floor coverings, giving special consideration to recent developments, new construction techniques and finishes, and measurement and the opportunity for individual investigation and research. (45-0) O

**FM 250 Seminar in Clothing Fashion** 2 Sem Hrs  
Prerequisite: Permission of the instructor. This course is primarily designed for majors in the fashion curriculum. Students will study the New York fashion market through visits to apparel manufacturers, apparel designers, buyers' showrooms, resident buying offices, advertising agencies, retail ready-to-wear and boutiques, pattern companies, costume museums and other places of interest. Normally the class will spend one week in New York at the beginning of spring semester. Students pay tuition plus all their expenses. (30-0) S

**FM 251 Apparel Center Experience** 1 Sem Hr  
Prerequisite: Permission of the instructor. Primarily for majors in the Fashion curriculum. Students will study the Chicago apparel industry through visits to apparel manufacturers, buyers' showrooms, resident buying office, area designers, retail ready-to-wear and boutiques, costume museums and other places of interest. Normally, the class will spend 3 days in the market. Students pay tuition plus all their expenses. (0-15) F



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## French Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

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## Fire Science Technology Courses ♦♦♦♦♦

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**FST 207 Fire Protection Systems II** 3 Sem Hrs  
Prerequisite: FST 107. A comprehensive study of fire protection system in buildings. Includes design standards, conducting plan review, inspection, testing and maintenance of fire alarms, automatic detection devices, manual devices, automatic sprinklers, foam-water, water spray, standpipe, water supply and automatic chemical agent systems. (45-0)

**FST 211 Fire Fighter II-C** 4 Sem Hrs  
Prerequisite: FST 112. Based on the National Fire Academy curriculum, and adopted by the Michigan Fire Fighters Training Council. Prepares a participant for testing for Fire Fighter II certification. Advanced skills are developed in the use of standard equipment such as breathing apparatus, ladders, hoses, and in salvage, forcible entry, and others. (66-0) O

**FST 212 Fire Fighters II-D** 4 Sem Hrs  
Prerequisite: FST 211. Based on the National Fire Academy curriculum, and adopted by the Michigan Fire Fighters Training Council. Prepares a participant for testing for Fire Fighter II certification. Advanced skills are developed in ventilation, rescue, building construction, aircraft fires, hazardous materials, and others. (66-0) O

**FST 224 Fire Investigation** 3 Sem Hrs  
An in-depth basic course which defines successful methods for conducting fire investigations. Specific topics include basic chemistry of fire, point of origin and fire cause, both accidental and incendiary, motivation of the firesetter, fire scene investigation, evidence collection, photography, follow-up investigation and court presentation. (45-0) WE

**FST 230 Fire Safety Education** 3 Sem Hrs  
A comprehensive study of national state and local fire safety education program strategies. Implementation of the five step planning process at the local level. Development of skills necessary to organize, plan and use sound management of financial, material, and human resources to reach designated goals and objectives, to address the demonstrated fire safety education needs of the local community. (45-0) SE (Every other year)

**FST 231 Fire Service Law** 3 Sem Hrs  
Basic introduction to the legal considerations that can affect the professional lives of members of the fire service, fire service-related occupations, and those who aspire to careers in the fire service. (45-0) SE (Every other year)

**FST 290-299 Special Projects in Fire Science Technology.** O

## Graphic Arts Technology Courses ♦♦♦♦♦

**GAT 100 Introduction to Graphic Arts** 4 Sem Hrs  
Prerequisite: MTH 100 and DRF 101, or concurrently. A course designed to familiarize people with the field of Graphic Arts. Course work includes a general overview of the methods and technology used in offset printing today. Field trips included. (60-0) FE WE

**GAT 110 Preproduction Graphic and Film Assembly I** 5 Sem Hrs  
Prerequisite: GAT 100 and either MTH 100 or higher, or score of 40 or higher on numerical skills part of assessment test. Introduction to process camera and darkroom procedures for line and half-tone photography. (50-40)

**GAT 112 Preproduction Graphic and Film Assembly II** 6 Sem Hrs  
Prerequisite: GAT 110. A continuation of GAT 110. Emphasis placed on 4/color image assembly, in-depth stripping and proofing techniques, ability to read and understand production keylines and various methods of quality control procedures. (60-45)

**GAT 222 Desktop Publishing for GAT I** 3 Sem Hrs  
Prerequisite: GAT 110, OSE 170, GAT 112 concurrently. The student advances from creating pages conventionally on a light table into computer-generated page make-up. Course begins with Macintosh basics, concentrates on building skills using Aldus PageMaker, and ends with an introduction to Quark Express software. (45-0)

**GAT 224 Desktop Publishing for GAT II** 3 Sem Hrs  
Prerequisite: GAT 222 or permission of instructor. Students advance from creating computer-generated pages in Pagemaker to QuarkXPress. Introduction to the major differences between the two, the highlights of QuarkXPress, and how it relates to the printing industry today. Continues to build high-level skills using QuarkXPress' QuarkEd training guides. Stress on "getting your disks right for the printer." (45-0) SE

**GAT 230 Computer Graphics** 3 Sem Hrs  
Prerequisites: GAT 226 or ART 271. Builds on previous Macintosh computer software and application skills to solve specific design problems. Uses combinations of several application software programs (drawing, painting, three-dimension) to achieve multiple effects with type and images on/for the printed page. Credit may be earned in GAT 230 or in ART 275 but not in both. (45-0)

**GAT 226 Desktop Publishing for GAT III** 3 Sem Hrs  
Prerequisite: GAT 224. Presents the use of Illustrator and PhotoShop softwares and their relationship to other graphic applications in the printing industry. Emphasizes both the design and technical aspects. (45-0) W

**GAT 240 Offset Press Fundamentals I** 3 Sem Hrs  
Prerequisite: GAT 110. Provides students basic working knowledge of the small offset press: safety features, offset press configuration, platemaking, inks, and press work. (22.5-22.5)

**GAT 242 Sheet Fed Offset Press Fundamentals II** 3 Sem Hrs  
Prerequisite: GAT 240. Presents additional study and hands-on application of sheet-fed offset press work. (45-0)

## General Business Courses ♦♦♦♦♦

**GB 103 Basic Finance & Money Management** 3 Sem Hrs  
The basics of budgeting, money management, credit and buying, the intricacies of owning property, income tax, investments, insurance, wills and trusts. (45-0) O

**GB 110 Business Mathematics** 3 Sem Hrs  
Prerequisite: MTH 100 if mathematics placement test score unsatisfactory. Covers principles necessary for an understanding of math of the business world. Includes various methods of computing interest and bank discounts; installment buying; F.I.C.A. Federal Income Taxes and other payroll deductions; markup, cost and selling prices; various wage payment systems; sales and property taxes; insurance; measures of central tendency; and an introduction to the metric system. (45-0) A

**GB 120 Introduction to Fast Food/Family Dining Management** 3 Sem Hrs  
Overview of the fast food industry; past, present, and future. Compares and contrasts various fast food restaurant concepts using case histories of successful and unsuccessful companies in the industry. Includes the organization and impact of franchise and independent fast food restaurant; types of jobs and career opportunities; food purchasing, receiving, handling, and storage. (45-0) O

**GB 121 Management of Fast Food/Family Dining Establishments** 3 Sem Hrs  
Prerequisite: GB 110 and GB 120. Includes types and uses of common financial records; personnel planning and scheduling; marketing, promotion, and advertising; training and supervising specifically related to the fast food/family dining industry, evaluating employees; safety and health labor laws; wage and fringe benefit compensation; management of human resources; working with co-workers. (45-0) O

**GB 131 Small Business Management I** 3 Sem Hrs  
Overview of small business, what is necessary to start a small business, including: small business in free enterprise, the entrepreneur, opportunities and trends, business plan, legal aspects, location, financing, organizational planning and marketing. Helpful to those who are currently operating a small business. Case studies will be used throughout the course. (45-0) A



**GB 131A Starting a Business** .5 Sem Hrs  
Identifies rewards and drawbacks of small business entrepreneurship. Discusses readiness, trends, possible causes of failure, forces that influence whether an idea is a good investment opportunity as well as the pros and cons of buying an existing business. (7.5-0)

**GB 131B Evaluating a Business** .5 Sem Hrs  
Discusses the forces that determine the nature and degree of competition within the small business industry, the concept of niche marketing, the pros and cons of buying a franchise, and trends in franchising. Identifies the benefits and drawbacks of becoming a franchisor as well as recognizing the importance of customer service. (7.5-0)

**GB 131C Developing a Business Plan** .5 Sem Hrs  
Discusses how to prepare a business plan for small businesses. Identifies features that appeal to investors. (7.5-0)

**GB 131D Developing a Market Plan** .5 Sem Hrs  
Identifies core marketing activities, product strategies and advertising options for the small business. Discusses how marketing potential is determined, concepts of human behavior and developing a promotional mix. (7.5-0)

**GB 131E Financial and Risk Management** .5 Sem Hrs  
Identifies sources of funds for small businesses, types of insurance coverage and how to forecast a new venture's profitability. How to analyze financial requirements and methods of coping with business risks. (7.5-0)

**GB 131F Legal Considerations—Ownership and Staffing** .5 Sem Hrs  
Identifies common forms of organization for small businesses, factors to consider in choosing between different forms of business, and the steps in evaluating job applicants. Explains how different forms of ownership are taxed. (7.5-0)

**GB 132 Small Business Management II** 3 Sem Hrs  
Strengthens the entrepreneurial and management skills of those who are already in (or who may enter) business for themselves. Small business case studies are used extensively. (45-0) W

**GB 143 Principles of Advertising** 3 Sem Hrs  
Provides a broad view of advertising from the marketing and consumer point of view. Historical background, economic and social aspects, roles of advertising, advertising stages, target marketing, media, using selected behavioral science information in advertising, and obtaining proper advertising appeal are included. (45-0) A

**GB 145 Principles of Sales** 3 Sem Hrs  
Emphasizes the marketing concept and the importance of personal selling for those engaged in the marketing of products, services or ideas. Includes an analysis of the steps in a sales proposal. Classroom presentations by students required. (45-0) A

**GB 153 Introduction to Business** 3 Sem Hrs  
Clarifies the role of business in modern society both domestic and international. Includes an overview of the American business environment, forms of business ownership, obtaining and managing financial resources, management of organizations and human resources, and current issues in the free enterprise system. (45-0) A

**GB 155 Current Business Issues I** 1 Sem Hr  
Pursues the current happenings in business by analyzing the impact of current issues on business. Students will be expected to read and utilize current business periodicals. (15-0) O

**GB 156 Current Business Issues II** 1 Sem Hr  
Pursues the current happenings in business by analyzing the impact of current issues on business. Students will be expected to read and utilize current business periodicals. (15-0) O

**GB 158 Public Relations** 3 Sem Hrs  
Covers the basic principles of the role of public relations in society, public relations principles and their application, procedures for planning and implementing public relations campaigns, plus the identification of "publics" and the strategies for influencing them. (45-0) O

**GB 172 Residential Mortgage Lending** 2 Sem Hrs  
Covers the functions of the mortgage loan department, the loan evaluation process, appraisals, closing and servicing loans, as well as collection and foreclosure procedures. Government loan programs and the secondary mortgage market will be studied. (Expands on IFE 011) (30-0) O

**GB 173 Residential Appraising** 2 Sem Hrs  
Designed primarily for lending personnel in financial institutions, as well as for appraisers seeking professional designation. Students will be introduced to principles of single family appraising, and by applied examples understand: (1) nature, purpose and approaches to appraising, (2) methods of neighborhood and site analysis. (30-0) O

**GB 181 Family Law** 3 Sem Hrs  
A study of the marriage relationship, divorce, separation agreements, name changes, as well as laws governing custody, legitimacy, adoption, guardianship and support of the children. (45-0) O

**GB 182 Probate Law** 3 Sem Hrs  
A study of trusts and estates, probate administration, life insurance and estate planning, with specific emphasis on wills. (45-0) O

**GB 191 Quality Teamwork** 1 Sem Hr  
Designed to build the students ability to respond to the needs of groups as a team member and a team leader. Studies team structures, roles of team members, and tools used in facilitating teams that contribute to organizational quality. Opportunities to model effective team operations will be provided. Credit may be earned in either QA 191 or GB 191 but not in both. (15-0) O

**GB 203 Business Ethics** 3 Sem Hrs  
A study of basic ethical concepts such as dignity, privacy, manipulation and rights and serves as a foundation for analysis of ethical conflict situations arising specifically in a business environment. Designed to reinforce the ability to make cogent, well-reasoned decisions in the context of ethical dilemmas surrounding such topics as advertising, consumer rights, employee motivation, loyalty, whistle blowing, and the environment. Credit may be earned in GB 203 or PHL 203 but not in both. (45-0) O

**GB 204 American Business History** 2 Sem Hrs  
Covers the period from early colonial to modern times. Emphasis will be placed upon the religious, social, political and economic forces that have shaped the unique character of American business. Major focus will be upon late nineteenth century and modern times with emphasis on industrial growth, business consolidation, the anti-trust movement and the effects of the Depression and New Deal on business. This course may also be taken as HIS 204. Students receiving credit in this course cannot receive credit of GB 205, HIS 204 or 205. (30-0) W

**GB 205 American Business History** 3 Sem Hrs  
Covers the period from early colonial to modern times. Emphasis will be placed upon the religious, social, political, and economic forces that have shaped the unique character of American business. Major focus will be upon late nineteenth century and modern times with emphasis on industrial growth, business consolidation, and anti-trust movement, and the effects of the Depression and New Deal on business. The students will be required to complete a major paper or project. This course may also be taken as HIS 205. Students receiving credit in this course cannot receive credit for GB 204 or HIS 204 or 205. (45-0) W

**GB 212 Food Service Sanitation** 3 Sem Hrs  
Designed for food service managers, supervisors, owners and those aspiring to management jobs in the industry. A study of food service sanitation, state public health and food service regulations and training of food service personnel. This course is a prerequisite for those wishing to be certified by the State of Michigan Department of Public Health and NIFI (National Institute of the Food Service Industries) as a food service manager. (45-0) O

**GB 231 Industrial Relations** 3 Sem Hrs  
Prerequisite: GB 153, or MFG 111 and IS 110, or permission of instructor. Provides a study of the human factor in industry. Problems of wages, hours, unemployment, working conditions; federal and state laws which relate to labor and management relations; policies and practices of unions and management. (45-0) O



**GB 232 Case Studies in Labor Relations****3 Sem Hrs**

Prerequisite: GB 231 or permission of instructor. Application of principles of industrial relations to collective bargaining case studies. Actual cases are discussed and evaluated in reference to current labor laws and personnel practices. (45-0) O

**GB 243 Principles of Marketing****3 Sem Hrs**

Prerequisite: GB 153. Provides an understanding and interpretation of the marketing system and its importance in the economy and the place of the marketing function in business management. The marketing framework is established and a basic understanding of the psychological, environmental and managerial functions and processes that are employed in contemporary marketing are presented. (45-0) A

**GB 245 Principles of Management****3 Sem Hrs**

Prerequisite: GB 153 or permission of the instructor. Theories of management practices will be discussed and fundamentals of administrative, executive, and staff management explained. Emphasis is placed on discussion of the management functions of planning, organizing, directing, controlling, as well as preparation of information required for decision making. The analysis of management problems and the synthesis of solutions will be covered. (45-0) A

**GB 246 Supervision****3 Sem Hrs**

A review of the main management concepts, and a discussion of what a supervisor is and does. Emphasis placed on what makes an effective, efficient supervisor; techniques used by supervisors in problem solving will also be discussed. Leadership, time management, hiring, evaluation, discipline, and health and safety will be presented. Role plays will be utilized. (45-0) O

**GB 247 Principles of Retailing****3 Sem Hrs**

Prerequisite: GB 153 or permission of the instructor. Store location, organization structure, and retail personnel management are discussed in detail. Merchandising policies and budgets, and buying and pricing merchandise are presented. Retail advertising, personal selling, customer services, and loss prevention are also presented in some detail. The scope of the retailing industry, requirement of retail management as well as careers in retailing are discussed in the course. (45-0) FW

**GB 248 Principles of Buying for Resale****3 Sem Hrs**

Prerequisite: GB 247 or permission of instructor. The buying function in retailing and wholesaling will be explored in depth. The principles of foreign and domestic vendor location and the legality and ethics in the buyer-vendor relationship are covered. The factors determining merchandise selection, including consumer analysis, building model stocks, and estimating sales potential will be studied. Merchandising expense control factors, manual and computer inventory control systems, as they relate to buying, will be studied. (45-0) EO

**GB 251 Business Law I****3 Sem Hrs**

This course provides a comprehensive study of both state and federal court systems, and the relationships of the participants in a lawsuit, including judges, juries, litigants, witnesses and attorneys. Particular areas of business law that are studied in the context noted above include tort law, contract law, agency law, and the law of personal property and bailments. (45-0) A

**GB 252 Business Law II****3 Sem Hrs**

Prerequisite: GB 251 or permission of instructor. This course provides a continued study of court systems, with emphasis in specialized areas of business law including sales law, commercial paper law, secured transactions and bankruptcy law, real property law and corporation law. The Uniform Commercial Code and recent consumer protection legislation are stressed. (45-0) A

**GB 253 Applied Marketing Strategies****3 Sem Hrs**

Prerequisite: GB 243 or permission of instructor. Students make strategic marketing decisions, using cases from manufacturing, service and retail industries. Topics include: situation analysis, segmentation, positioning, market research and information systems, international marketing, and product, price, distribution and promotion strategies. Students will be introduced to the development and implementation of the marketing plan and budget. (45-0) WE

**GB 256 Human Resources Management I****3 Sem Hrs**

Prerequisite: GB 153 or permission of instructor. Development of human resources management; the environment in which human resources management must operate; contemporary legal guidelines; human resource planning and recruitment; developing effectiveness in human resources through training, development, and appraisal; and creating a productive work environment through motivation, communication, leading and directing. (45-0) A

**GB 257 Human Resources Management II****3 Sem Hrs**

Prerequisite: GB 256 or permission of instructor. The fostering of employee-management relationships; dynamics of labor relations; collective bargaining; disciplinary action; compensation management; incentive compensation; employee benefits; safety and health; auditing the Human Resources Management program; and international Human Resources Management will be covered. (45-0) O

**GB 260 Human Relations in Management****3 Sem Hrs**

Prerequisite: GB 256 or permission of instructor. Covers personnel problems that managers and supervisors are likely to encounter on a frequent basis; a logical approach to solving personnel problems; motivational methods, leadership techniques; concepts of organization and organizational climate; factors affecting employee morale; dynamics of change; effective utilization of under-represented groups of employees; problems of alcohol and drug usage and changing nature of work and workers. (45-0) O

**GB 265 International Business****3 Sem Hrs**

Prerequisite: GB 153 or permission of instructor. An examination of the three environments within which the typical business person must function in a global economy: domestic, foreign and international. The international organizations (i.e., GATT, IMF, OPEC, EC and the UN) and the international monetary system will be covered. Physical, sociocultural, political, legal, labor and financial forces in global markets will be analyzed. Case studies will be used to emphasize management decision making in marketing, production, financing and staffing in world-wide companies. (45-0) W

**GB 268 International Studies in Business****4 Sem Hrs**

An analysis of foreign business including its: service industries; approaches to marketing and advertising; facilities for mass transportation; impacts of trading unions such as the European Economic Community and other elements of foreign and international trade. Includes field study, classroom lectures, and individual consultation with the faculty sponsor. Expenses for field study must be paid by the student. By prior arrangement with appropriate faculty, students may also take International Studies in the following disciplines: GEO 268, ECN 268, SOC 268. (60-0) O

**GB 274 Computer Aided Decisions****2 Sem Hrs**

Prerequisites: CIS 133 and GB 243 or GB 245. Practices the strategic decision making process in management/marketing within an interactive business simulation class using the IBM or compatible microcomputer. Explores the use of microcomputer application software in the area of decision support. Topics include modeling, simulation, query, languages, spreadsheets, and expert systems. Presents strategic decision situations to illustrate techniques utilized for unstructured decision making in the business environment. (30-0)

**GB 290-299 Projects in General Business O****German Courses****GE 104 Speaking German****2 Sem Hrs**

The student will learn a number of simple, everyday expressions in German. Intensive practice of comments-inquiries-responses about name, age, nationality, family, work, etc. Expressions useful in hotels, restaurants, stores, transport systems as well as in meeting people, will be included. The basics of the German writing system will be introduced. (30-0) O



4 Sem Hrs

Acquisition of proper pronunciation, basic grammatical structures and vocabulary of modern spoken and written German by means of oral practice, reading of simple texts, and written exercises. (60-0) FW

4 Sem Hrs

Prerequisite: GE 111 or one year of high school German. A continuation of GE 111. (60-0) O

4 Sem Hrs

**Prerequisite:** GE 112 or two years of high school German. Continued emphasis is placed on proper pronunciation habits and on application of basic grammatical structures of modern spoken and written German by means of oral exercises, conversations, reading of German prose, and written exercises. As much as possible, this class is conducted in German. (60-0) O

4 Sem Hrs

Prerequisite: GE 211 or equivalent. A continuation of GE 211 with emphasis on conversation and composition. (60-0) O

**GE 290-299 Special Projects in German O**

## Geography Courses ♦♦♦♦♦

2 Sem Hrs

One portion of the course will be devoted to different kinds of maps and their interpretation. Topics include: map use, scale, symbols, measuring of distance, profiles and gradients. Use of topographic and aerial photomaps will be included. The other portion of the course will be the activity of orienteering, which affords the student the opportunity for recreation and mental awareness with a map and compass in an outdoor setting. requirements to navigate the course by using a survey map will be based on individual abilities and experience. About one-half of the class hours will be spent outdoors. Students will be required to provide an orienteering compass. (15-30) O

3 Sem Hrs

Provides study of the fundamentals of weather including underlying physical processes of the atmosphere, air masses and general circulation. Develops weather map understanding and analysis, forecasting, and weather measurement and instrumentation. (45-0)

4 Sem Hrs

Study focuses on the aspect of geography concerned with "man's" utilization of an impact upon the natural environment. Included are population distribution and growth, settlement forms, utilization and conservation of natural resources, the impact of technology on human occupancy of the earth, man's role in modifying the earth's surface and the origin and spread of cultural elements. (60-0) O

4 Sem Hrs

Study of the natural environment which is important to people and their activities; introduction to maps and physical features; earth-sun-moon relationships; earth materials, land forms; drainage; and major natural resources. Introduction to weather and climate, soils and vegetation — their character, causes, significance and distribution. (45-30) A

4 Sem Hrs

Essential geographic characteristics and concepts of selected cultural regions of the world. These regions will be compared and contrasted in terms of their present and potential development. Examples will be selected from both the western and non-western world. (60-0) FW

2 Sem Hrs

Focuses on the impact of the Great Lakes on Michigan's weather and climate. Topics will include: Basic atmospheric controls of Michigan's weather, collection of basic weather data, construction and interpretation of weather maps, and storms on the Great Lakes. The impact of Michigan's weather on our agriculture, tourism, and other industries, as well as Michigan air quality, will be included. Can be taken for science or social science credit. (30-0) O

**GEO 150 Natural Regions of the United States and Canada**

3 Sem Hrs

Study focuses on an examination of the face of our land. Each region is analyzed in terms of the initial and sequential earth processes that have forged its structure as well as the climatic, vegetation, and soil patterns that give character to its landscape. Includes natural resources and environmental problems characteristic of each region. Many national parks and monuments will be examined. Topographic maps and air photographs will be used as tools for landscape analysis. (45-0) O

4 Sem Hrs

A survey of locational economic patterns and their interrelationships. Included are: energy production, manufacturing, transportation, etc. Special emphasis will be placed upon the study of social and spatial variation in urban-rural land use problems and analysis related to above, particularly those in the local and state area. (60-0) O

3 Sem Hrs

Regional geographic interpretation of the area as a continent. Study of relationships of physical, economic, social and political environment activity. (45-0) O

3 Sem Hrs

Similar to Geography 222 but applied to Europe. (45-0) O

3 Sem Hrs

**GEO 226 Geography of United States and Canada** 3 Sem hrs  
Similar to Geography 222 but applied to the United States and Canada.  
(45-0) O

4 Sem Hrs

An interdisciplinary course, seeking through the study of native literatures to understand and appreciate the cultures, problems and potentials of Third World countries (Africa, Latin American and Asia) in their geographical settings. Credit may be earned in GEO 243 or ENG 243 but not in both. (60-0) O

2 Sem Hrs

A regional geographic interpretation of Michigan as a setting for economic activity within the state. Study focuses on the geographic relationships between the environment, and the cultural and economic activities within Michigan. (30-0) O

4 Sem Hrs

An interdisciplinary description and analysis of processes and conditions which created and maintain the "Third World." Population, physical environment, historical, political, social and economic factors will be addressed. Current concepts and development theories will be explored and applied. Credit may be earned in GEO 265 or SOC 265 but not in both. (60-0) O

**GEOGRAPHY COURSES 260-269**

These courses usually involve classroom work on the Delta campus followed by a field trip ranging in length from three days to several weeks. Prior to registration, students must make field trip financial arrangements with the instructor.

3 Sem Hrs

**Prerequisite:** Permission of the instructor. A regional geographic interpretation of the Pacific Islands emphasizing their physical, environmental and cultural patterns, and their economic development. Study will focus on three subregions: Polynesia, Melanesia and Micronesia. Field work in the Pacific Islands will be required. Students must pay own expenses. (45-0) S

1 Sem Hr

Study focuses on the role of solution in forming caves and in landscape formation (karst topography). Formation of stalactites, stalagmites, flowstones and other crystal formations are also studied. Students are required to participate in weekend field trip to Mammoth Cave National Park, Kentucky. Students must pay own expenses. (15-0) O

1 Sem Hr

**GEO 202 - The Geography of the Canadian Shield**  
Focuses on the interrelationships between humans and the physical environment of this, the largest of the landform provinces of Canada. Major topics include the physical environment, natural resources, recreation, and settlement patterns. Required classroom work, travel and field research will help the students to develop their understanding of this wilderness area. Student must pay own expenses for field trip. (15-0) FS



1 Sem Hr

Focuses on the economic, social and environmental impact of coal mining on the region of Appalachia. Topics include: shaft, strip and drift mining, reclamation of strip mined lands, the relationship between mine workers and the people of Appalachia, and preservation of threatened natural areas. A weekend field trip is required. Students must pay own expenses. (15-0) Q

1 Sem Hr

Focuses on the physical, cultural, and historical geography of those regions west of the 100th meridian of longitude in the United States and Canada. Regions to be covered include the Great Plains, Rocky Mountains, the Colorado and Columbia Plateaus, the Basin and Range Province, and the Pacific Coast mountains and basins. Classroom work, plus required travel and field research will develop a first-hand understanding of these areas. Students must pay own expenses for field trip. (60-0) O

2 Sem Hrs

Focuses on past, present and future energy production, its effect on the economy, and its impact on the environment of Michigan and selected regions of the United States and Canada. Field trips will be made to selected energy facilities such as atomic power; hydroelectric and solar power installations; an oil field; a shaft and strip coal mine; and energy sensitive industries. Students must pay own expenses. (45-0) S

4 Sem Hrs

Focuses on both the physical and historical geography of New England. Study areas include Cape Cod, the Boston area, the White Mountains, the Maine coastline and Acadia National Park. The students will study the development of the New England landscape through cultural sequencing, viewing the present as a mosaic of past landscapes. Artifact landscapes will be examined from the American Indian, Colonial Industrial Revolution, maturing economy, and modern eras. Field study, in addition to classroom work is required and must be paid for by the students. (60-0) O

1 Sem Hr

Reviews the causes and consequences of continental glaciation. Topics include climatic change, past and present distribution of continental glaciers and landscape features formed by glaciation. The possibility of the world entering another "Ice Age", will also be discussed along with what social modifications might be necessary if this should happen. Field work in a glaciated area will be included. Students must pay own expenses. (15-0) O

4 Sem Hrs

A geographic interpretation of selected world regions emphasizing their physical environments, cultural patterns and economic development. Includes class lectures, individual consultation and international field study. Expenses for the field study must be borne by the student. By prior arrangement with appropriate faculty, students may also take international studies in the following disciplines: SOC 268, ECN 268, GB 268. (60-0) Q

3 Sem Hrs

Focuses on both the physical and cultural geography of Florida. Study areas include the Florida karst landscapes, the Everglades, barrier islands and coral reefs. Students will also investigate citrus and winter vegetable growing, livestock raising, phosphate mining, and the recreational-retirement industry. Various environmental impact problems will be discussed. Field study in addition to classroom work is required and must be paid for by the students. (45-0) O

1 Sem Hr

An examination of a variety of alternative energy technologies, including solar, wind, wood, biologically derived liquid fuels, geothermal energy, etc., that may greatly change our patterns of energy procurement by the year 2000 A.D. Weekend field work is required. Students must pay own expenses. (15-0) S

1 Sem Hr

An examination of Michigan's primary energy resources including production and demand for oil, natural gas, and nuclear power. Potential environmental impacts will also be discussed. Weekend field work is required. Students must pay own expenses. (15-0) S

1 Sem Hr

A regional geographic interpretation of the state of Kentucky, emphasizing its physical, cultural, economic, and historical patterns. Classroom work, travel and field research in Kentucky are required. The student must pay own expenses. (30-0)

2 Sem Hrs

A regional geographic interpretation of the state of West Virginia, emphasizing its physical, cultural, economic and historic patterns. Classroom work, travel and field research in West Virginia are required. Students must pay own expenses. (30-0)

3 Sem Hrs

A regional geographic interpretation of the states of Washington and Oregon, emphasizing their physical, cultural, economic and historical patterns. Classroom work, travel to the field research in the area are required. The student must pay own expenses. (45-0)

### GEO 290-299 Special Projects in Geography

## **Geology Courses**

1 Sem Hr

A study of the internal dynamics of the earth. Major topics will include: catastrophic events in historic times, products of vulcanism, volcanic rocks, vulcanism and geothermal energy, relationship to earthquakes and volcanoes to plate tectonics, interpretation of earthquake records, man-made earthquakes, earthquake prediction and control. (15-0) Q

1 Sem Hr

An introduction to the origin of life on earth; the nature and characteristics of life, as we know it. An analysis of the chances for life occurring on other worlds in space such as Mars, Jupiter or other planets. A discussion of UFOs and their bearing on the possibility of intelligent life elsewhere in the Galaxy; our attempts to communicate with intelligent life other than ourselves. (15-0) Q

1 Sem Hr

An inquiry into theories concerning the origin, evolution, and history of the universe. Recent discoveries, such as black holes, quasars, and pulsars, are examined and used to illustrate how our ideas of the universe change. (15-0) O

4 Sem Hrs

Study of the overall structure of the earth and the rocks which form the crust. An introduction to the processes of erosion and weathering caused by the work of natural agents such as water and ice. Discussion of Plate Tectonic Theory and implications. Laboratory study of common rocks, minerals and selected fossils. Field trips optional. (45-30) A

4 Sem Hrs

Prerequisite: GLG 111. Study of the history of the Earth as recorded in rocks. Description of continental structural development in terms of plate tectonics using North America as the principal example. Origin and evolution of life. Laboratory work includes studies of invertebrate fossils and geologic map interpretation. Field trips optional. Formerly called Historical Geology. (45-30) W, odd numbered years only.

3 Sem Hrs

An interpretation of the origin and characteristics of the principal geological features of Michigan through the application of basic geological principles. Includes some identification of rocks, minerals and fossils. Occasional field trips. (45-0) O

2 Sem Hrs

An interpretation of the principal geological features of the Great Lakes region through the application of basic geological principles. Includes some identification of rocks, minerals, and fossils. Field trip required. Students must pay own expenses. (30-0) SF

3 Sem Hrs

A study of the origin of geologic features of selected national parks. Includes an analysis of rocks, minerals, fossils, and physical landscapes as well as the geologic history of varied regions of the United States. Interpretation of topographic and geologic maps of selected areas. (45-0) 0



3 Sem Hrs

Selected topics in Earth's long history. These will include the origin of the Earth, the origin of life on Earth, evolution, the fossil record, plate tectonics, the extinction of various organisms, and other topics of current geological interest. (45-0) O

2 Sem Hrs

**Prerequisite:** Permission of Instructor. A study of the origin and distribution of the geologic features of the Grand Canyon of Arizona. Major topics include rock types, origin of landscape features, geologic history of the Grand Canyon, and human impact of the environment. Field work in the Grand Canyon is required. Students must pay own expenses. (30-0) S

4 Sem Hrs

A geologic interpretation of selected world regions. Emphasis on physical environments, natural geologic processes, and geologic history of the study area. Includes class lectures, individual consultation, and international field study. Expenses for the field study must be borne by the student. (60-0) Q

## GLG 290-299 Special Projects in Geology O

[illegible]

3 Sem Hrs

**HIS 103 - A History of American Government** 3 semester hours  
An historical survey of the traditions and institutions of the American system of government from colonial times to the present. Special attention will be given to the historic development of the Presidency, the Congress, and the federal court system. Civil liberties, political participation, and the dynamics of federalism will also be examined from an historical perspective. (This course satisfies the American Government graduation requirement in specified curricula.) (45-0) O

4 Sem Hrs

**HIS 111 – A Survey of Early Western Civilization** 4 Sem. hrs.  
Political, social, economic and cultural history of Europe from prehistoric times to the end of the Reformation. Particular attention given to characteristics of civilizations and their relevant contributions to the modern world. (60-0) A

4 Sem Hrs

HIS 111 recommended. Political, social, economic, and cultural history of Europe from the 1600s to the present time. Particular attention is given to cultural and democratic movements and their influence on current history. (60-0) A

2 Sem Hrs

**HIS 113 History of Michigan** 3 credit hours  
(Not open to students with credit in HIS 114.) An exploration of the history of Michigan from the time of the first known human inhabitants, through the periods of French and British settlement and U.S. acquisition. Major emphasis will be given to the study of Michigan history through the periods of territorial status, statehood and industrial growth. Special attention will be directed toward the Saginaw Valley and its relationship to a developing Michigan. (30-0) FW

3 Sem Hrs

**HIS 114 History of Michigan/WWI Project** (Not open to students with credit in HIS 113.) An exploration of the history of Michigan from the time of the first known human inhabitants, through the periods of French and British settlement and U.S. acquisition. Major emphasis will be given to the study of Michigan history through the periods of territorial status, statehood and industrial growth. Special attention will be directed toward the Saginaw Valley and its relationship to a developing Michigan. The student will be required to complete a major paper or project. (45-0) FW

2 Sem Hrs

**HIS 137 History of the Saginaw Valley** 2 Credits  
A history of the Saginaw Valley region from pre-settlement until the present. Emphasis will be placed on viewing the Valley from the perspective of material history. A field trip to local sites or a substitute assignment is required. (30-0) O

2 Sem Hrs

A survey of labor history in the United States from the beginning of the industrial revolution to the present. Class projects will include a study of labor history in the Saginaw Valley. (30-0) O

2 Sem Hrs

Covers the period from early colonial to modern times. Emphasis will be placed upon the religious, social, political and economic forces that have shaped the unique character of American business. Major focus will be upon late nineteenth century and modern times with emphasis on industrial growth, business consolidation, the anti-trust movement and the effects of the Depression and New Deal on business. This course may also be taken as GB 204. Students receiving credit in this course cannot receive credit for HIS 205 or GB 204 or 205. (30-0) FW

3 Sem Hrs

**HIS 205 American Business History, What Project?** This course covers the period from early colonial to modern times. Emphasis will be placed upon the religious, social, political and economic forces that have shaped the unique character of American business. Major focus will be upon late nineteenth century and modern times with emphasis on industrial growth, business consolidation, the anti-trust movement and the effects of the Depression and New Deal on business. The student will be required to complete a major paper or project. This course may also be taken as GB 205. Students receiving credit in this course cannot receive credit for HIS 204 or GB 204 or 205. (45-0) FW

3 Sem Hrs

An examination of the transition of Africans to Afro-Americans, the Americanized institution of slavery, the development of the Afro-American community, and its impact on the culture and society of the new world. Also examines Afro-American resistance to slavery, free Afro-Americans, and the participation of the Afro-American community in the Civil War and Reconstruction. (45-0) O

3 Sem Hrs

**FIS 215 Recent African-American history: 1860-1960** Sem I  
Focus will be on the ideological, strategic and demographic changes and conflicts of Afro-Americans since emancipation, with special emphasis on legal and extra-legal terror and the many social movements (Bookerism, Garveyism, Pan-Africanism, and the 1960s). Also examines emerging Africa, new-racism, and the diversity within the current Afro-American community. (45-0) FW

3 Sem Hrs

A survey of the social, cultural, economic and political history of the Mexican-American peoples. Included are the rise and fall of the ancient Indian tribes of Mexico, history of Mexico to the present, the redevelopment of Mexican-American culture in the United States, and the theories attempting to explain the present condition of Mexican Americans in the United States. (45-0) O

2 Sem Hrs

A survey of Jewish history from the 13th century B.C.E. up to the present. Emphasis is on the shaping of Jewish experience by the political, economic and social structures of the societies in which it developed. Also included are the impact of Judaism on its surrounding cultures and the differences and tensions between the Jews of Israel and those living in other parts of the world. (30-0) O

3 Sem Hrs

**HIS 221 – Early American history**  
An introductory course in American history from its immediate European background to the end of the Reconstruction Era. Special emphasis is given to the growth of institutions and ideas. The political, economic, and social experiences of the young Republic, and their influence on contemporary American are also examined. (45-0) A

3 Sem Hrs

A survey of modern America from the closing of the West in 1890 to the present with special emphasis on the formation of American character traits. Topics such as the frontier, abundance, growth of government and regulation, the Depressions, and the Cold War will be examined for their influence upon the development of the American individual. (45-0) A



**HIS 232 History of Russia****3 Sem Hrs**

HIS 111 or 112 recommended. A survey of the major lines of Russian political and cultural development from Kiev in the 1900s to the present, with more emphasis on the 19th and 20th Centuries than on earlier eras. Student reports on topics historical and cultural constitute about 40 percent of course. (45-0) O

**HIS 261 The Civil War Era****3 Sem Hrs**

A survey of American Civil War era, from the origins of sectional conflict through reconstruction. While tracing the narrative development of major events, the course will examine the social, economic, political, and technological changes brought by the war, which made the Civil War the defining event in modern American history. (45-0)

**HIS 268 International Studies in History****4 Sem Hrs**

The student will do an in-depth historical study in one or more aspects of the history of the country other than the United States. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. (60-0) O

**HIS 275 The Vietnam War****3 Sem Hrs**

An interdisciplinary examination of the Vietnam War from its earliest beginnings as a colonial conflict to the withdrawal of American forces in 1975. The course seeks to integrate military, diplomatic and political factors in order to understand America's involvement. It also is an attempt to consider American decision-making in the broad context of the nation's global outlook and policies. Credit may be earned in HIS 275 or POL 275 but not in both. (45-0) O

**HIS 290-299 Special Projects in History O****Health Science Courses ♦♦♦♦♦♦♦♦♦♦****HSC 105 Medical Terminology****2 Sem Hrs**

Designed to develop a basic understanding of the spelling, meaning and pronunciation of commonly used prefixes, suffixes, and root words, and their combining forms, used in all fields of allied health professions. (30-0) A

**HSC 130 Basic Health Care Techniques I****1 Sem Hr**

Introduces the fundamentals of recording in and interpretation of patient health records and the basics of body mechanics and patient ambulation practices and methods. (15-0) A

**HSC 135 Basic Health Care Techniques II****1 Sem Hr**

Introduces the fundamentals of basic microbiology and aseptic techniques. (15-0) A

**HSC 140 Basic Medical Emergencies****2 Sem Hrs**

Provides the background necessary to respond to basic emergency situations in the clinical setting. Includes respiratory, cardiac, neurological, and diabetic emergencies. Cardiopulmonary resuscitation certification requirements must be met for successful completion of course. (30-0) A

**HSC 205 Legal Aspects of the Health Care System****2 Sem Hrs**

An overview of state legislation affecting various aspects of the health care system, including study of common legal problems, etc., such as dispensing of medication and privacy of medical records. Designed primarily for health care professionals. (30-0) W

**HSC 290-299 Special Projects in Health Science O****Human Services Courses ♦♦♦♦♦♦♦♦♦♦****HSR 101 Introduction to Human Services I****2 Sem Hrs**

Presents an overview of the basic programs and social institutions which provide human services, as well as an introduction to basic skills needed by human services workers. (30-0) O

**HSR 102 Introduction to Human Services II****2 Sem Hrs**

Presents and provides opportunities to demonstrate applications of methods and problem solving techniques used by human services workers in a variety of settings. (30-0) O

**Interior Design Courses ♦♦♦♦♦♦♦♦♦♦****ID 100 Introduction to Interior Design****3 Sem Hrs**

This course will cover the aims, principles, and means of design. Light and color will be thoroughly explored including color theory and color planning. Home planning will be analyzed in relation to activities, space and equipment. Enrichment of space through the use of accessories, plants, paintings, prints, and sculpture will be studied. The student will also be introduced to lighting, heating, ventilation, and acoustics. (45-0) FW

**ID 170 Design Elements****4 Sem Hrs**

Prerequisite: ID 100, GB 110, and permission of instructor. Appropriate treatment and materials for windows, walls and floor coverings will be studied. Emphasis will be placed on current treatment trends and the process of measuring and translating measurement accurately into material needs and cost estimates. Field trips, guest speakers and practical experiences will be emphasized. (60-0) F

**ID 200 Spatial Analysis and Presentation****3 Sem Hrs**

Prerequisite: ARC 105 and ID 100. (Recommended that ID 200 and ID 210 be taken concurrently). Emphasis will be placed on the analysis of spatial arrangement and the relationship it has to adjacent space and accepted standards. CAD and basic drawing methods will be utilized and standard building blueprints will be studied. Students will conduct presentations of floor plan arrangements, interior elevations, and interior perspectives. Familiarization with micro computers required or permission of instructor. Credit may be earned in ID 200 or ARC 200 but not in both. (45-0) W

**ID 210 Furniture****3 Sem Hrs**

(Recommended that ID 200 and ID 210 be taken concurrently). A study of furniture as an essential element in interior design. Major furniture styles will be covered from a historical perspective with applications to present uses. The manufacture of both case and upholstered goods for the purpose of learning construction details, order, placement and delivery cycle, and the cost to quality relationship will be included. (45-0) EW

**ID 230 Applied Interior Design****3 Sem Hrs**

Prerequisite: ID 210. Designed so the student will learn how to deal effectively with special problem areas in interior decoration. The student will learn how to work with clients, how to interview and determine needs and wants and translate the information into practical decorating solutions, including shopping for appropriate floor and wall coverings, furniture, window treatment and accessories. The student will work with an actual client family, be given an established budget, prepare and give appropriate oral and visual presentations to the client. (45-0) W

**ID 240 Commercial Interior Design****2 Sem Hrs**

Prerequisite: ID 200 and permission of instructor. A study of materials used, equipment necessary, and furniture available in the field of contract/commercial design. Legal requirements for commercial, institutional and other public spaces will be discussed. Student presentation will be emphasized. (30-0) F

**ID 241 Contract/Commercial Design II****2 Sem Hrs**

Prerequisite: ID 240 and permission of instructor. The application of contract/commercial elements utilizing actual space project examples. Contract design within legal boundaries will be stressed. Project examples will include commercial offices, institutional work sites and other public environments. Student presentations will be emphasized. (30-0) F

**ID 245 Design Trends****2 Sem Hrs**

Prerequisites: ID 241, ID 230 or concurrently. Study of current trends in furniture, accessories, textiles, and lighting. Student presentation, guest speakers and field trips will be emphasized. This is a "capstone" course recommended to be taken concurrently with ID 230. (30-0) W



**ID 250 Seminar in Interior Design** **2 Sem Hrs**  
Prerequisite: ID 100 or permission of instructor. Students will study the New York interior design market. Displays, styles of furniture, and current period representations will be studied at the manufacturer showrooms. Tour of designers' studios and discussion with area designers, lamp and accessories, museums, school, textiles company, carpeting firms and other places of interest will be included. Normally, the class will spend one week in New York at the beginning of spring semester. Students pay tuition plus all expenses. (30-0) S

**ID 251 Merchandise Mart Experience** **1 Sem Hr**  
Prerequisite: ID 100 or permission of instructor. Primarily for majors in the Interior Design curriculum. Students will study the Chicago Merchandise Mart and area resources available to interior designers. Opportunity to visit manufacturing plants, showrooms, area designers, retail operations, museums and other places of interest will be arranged. Normally the class will spend three days in the market. Students pay tuition plus all their expenses. (15-0) F

#### **ID 290-299 Special Projects in Interior Design**

### **In-Home Edu-Care Courses ♦♦♦♦♦♦♦♦♦♦**

**IHC 111 Introduction to In-Home Edu-Care Specialist** **3 Sem Hrs**  
IHC 111, CD 113, CD 114 and CD 160 must be taken concurrently. Exceptions require coordinator's approval. Introduces the field of in-home child care provider with an overall view of physical care of infants and creative activities for children. Must earn a grade of C (2.0) or better in this course to obtain a certificate as an In-Home Edu-Care Specialist or an Associate Degree of Applied Science in Child Development. (45-0) F

**IHC 117 In-Home Edu-Care Specialist II** **4 Sem Hrs**  
Prerequisites: IHC 111, IHC 117, CD 115, CD 116, and IHC 161 must be taken concurrently. Exceptions require coordinator's approval. Presents two major topics; professional development necessary to employment as an in-home child care specialist. Provides basic nutrition for all ages to include ethnic, religious or health considerations in the preparation of food. Must earn a grade of C (2.0) or better in this course to obtain a certificate as an In-Home Edu-Care Specialist or an Associate Degree of Applied Science in Child Development. (60-0) W

**IHC 161 Practicum as an In-Home Edu-Care Specialist** **2 Sem Hrs**  
Prerequisite: IHC 111, CD 113, CD 114 and CD 160. IHC 117, CD 115, CD 116 and IHC 161 must be taken concurrently. Exceptions require coordinators approval. Provides actual experiences with new borns, young children and special needs children. Emphasis will be on child care and interpersonal skills that would be required in a home-setting. Must earn a grade of C (2.0) or better to obtain a certificate as an In-Home Edu-Care Specialist or an Associate Degree in Child Development. (30-80) W

### **Interdisciplinary Humanities Courses ♦♦♦♦**

**IHU 101 Humanities Through the Arts** **3 Sem Hrs**  
A survey of the human condition as seen through film, dramas, music, literature, painting, sculpture, and architecture with an emphasis on the history, techniques, meaning, and evaluation of individual works of western art. (45-0) A

**IHU 102 Chicago Cultural Forms: An Interdisciplinary Humanities Field Trip** **3 Sem Hrs**  
The humanities will be directly experienced through the rich cultural heritage of Chicago reflected in its renowned museums, architecture, outdoor art treasures, ethnic mix jazz clubs, local theater troupes, the Chicago Symphony and Lyric Opera. Cultural forms will be studied to discover the contribution to life by the humanities. Students must pay own expenses. (45-0) O

**IHU 161 International Projects in Cross-Cultural Learning** **1 Sem Hr**  
Student volunteers will be assigned to either community agencies providing cross-cultural experiences or to an international work experience. Supportive seminars will provide both structure and background knowledge of the particular country involved. (A minimum of 30 hours volunteer placement is required). Credit may be earned in SOC 161 or IHU 161, but not both. (15-30) O

**IHU 162 International Projects in Cross-Cultural Learning** **2 Sem Hrs**  
Student volunteers will be assigned to either community agencies providing cross-cultural experiences or to an international work experience. Supportive seminars will provide both structure and background knowledge of the particular country involved. (A minimum of 60 hours volunteer placement is required.) Credit may be earned in SOC 162 or IHU 162, but not both. (15-60) O

**IHU 201H Honors Colloquy** **3 Sem Hrs**  
Prerequisite: Approval by Honors Program Director. Required of all honors program students. Explores self as learner, interaction between the learning self and others, growth and development of the learner so as to further self-knowledge, develop a sense of community, provide intellectual growth, bring out connections between disciplines, provide a forum for exchange of ideas, and provide each student with a mentor relationship. Individual conferences with instructor and one all-day workshop are required. Credit may be earned in IHU 201H or in ENG 201H, but not in both. (45-0) FW

**IHU 216 Producing a Student Publication** **4 Sem Hrs**  
Prerequisite: ENG 111. Provides a guided opportunity to learn about publishing by compiling, selecting, editing, and designing an annual publication of student writing, photography, and artwork. Focuses on hands-on experience in critical reading, writing, and thinking; editing; layout; production details; marketing; design; and distribution. (60-0) W

**IHU 282H Seminar in Social Issues** **3 Sem Hrs**  
Prerequisite: Honors program participant or permission of instructor. An integrated study involving exploration and development of critical thinking, analysis and problem-solving skills with an interdisciplinary approach focusing on a selected social issue. (45-0) W

#### **IHU 290-299 Special Projects in Interdisciplinary Humanities**

### **Industrial Supervision Courses ♦♦♦♦♦♦♦♦♦♦**

**IS 104 Construction Foreman Training** **3 Sem Hrs**  
Course developed by construction people for construction people who wish to acquire foreman training skills. Covers job supervisor's role as the person in the middle and relates the concepts of leadership, motivation, problem solving, communication, training, safety, materials handling and evaluation to foreman tasks. (45-0) O

**IS 110 Industrial Supervision** **3 Sem Hrs**  
Designed to give the student a general understanding of the following areas: Introduction to management; organization structures; product development; plant location and equipment; cost controls, material and production controls; personnel administration and management. (45-0) FE

**IS 118 Industrial Safety** **2 Sem Hrs**  
Safety fundamentals as related to the economics of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, plant housekeeping, occupational diseases, first aid, safety organization, protective equipment, and the promotion of safe practices. (30-0) FE WD

**IS 120 Supervisor/Employee Relations** **3 Sem Hrs**  
Prerequisite: IS 110. Course designed to help the supervisor solve day-to-day people problems. Presents techniques for communication and decision-making which are based on work experience and scientific research. (45-0) FE



## 2 Sem Hrs

IS 290-299 Special Projects in Industrial Supervision O



**LIT 219 Literary Analysis** **3 Sem Hrs**  
Prerequisite: ENG 112. A survey of, and practice in, methods of literary interpretation and appreciation, from the close reading strategies of New Criticism to the contemporary considerations of reader-response theory. Interpretive papers on particular works of fiction, poetry and drama are required. (45-0) FW

**LIT 220 Readings in Poetry** **3 Sem Hrs**  
Prerequisite: ENG 112. The student will have the opportunity to survey the representative poetry of various cultures and periods with an emphasis on British and American poetry. The course is designed to help the student understand and enjoy one of humanity's oldest and yet continually new and exciting art forms. (45-0) O

**LIT 221 Readings in the Short Story** **3 Sem Hrs**  
Prerequisite: ENG 112. The student will read selected short stories of British, American, and other authors in addition to increasing one's understanding of this relatively modern form, the student will explore ways in which the short story is personally meaningful in depicting our perception of ourselves and the world in which we live. (45-0) FW

**LIT 222 Readings in the Novel** **3 Sem Hrs**  
Prerequisite: ENG 112. From a reading of selected novels the student will develop understanding of the novel form. The student will also learn how to derive personal meaning and satisfaction from novels chosen from different times, places, and cultures. (45-0) F

**LIT 223 Readings in the Drama** **3 Sem Hrs**  
Prerequisite: ENG 112. Through reading of selected plays - past and present America, British and other cultures - the student will gain insight into the cultural contexts in which plays have been written and produced. The student will also discover how they represent significant expressions of humanity's response to experience and the world. (45-0) O

**LIT 224 Popular Literature** **3 Sem Hrs**  
Prerequisite: ENG 112 or permission of instructor. An examination of a particular body of popular literature, organized by the selection of material either from the works of one author or one genre (e.g. Science Fiction, Black Humor, War Novel, etc.) Course content to be announced each semester prior to registration. (45-0) FW

**LIT 225 Science Fiction and Fantasy** **3 Sem Hrs**  
Prerequisite: ENG 112. An exploration of the range and depth of science fiction and fantasy literature. Students will study major authors, themes, ideas and engage in individual projects. (45-0) O

**LIT 226 Introduction to Film** **3 Sem Hrs**  
The film as an art form and a mode of communication with special emphasis on developing standards of appreciation. Weekly screenings and discussion sessions will focus on understanding the medium's literacy roots and on the creative process itself from original conception to script to sight and sound images. (45-0) FS

**LIT 227 The American Motion Picture** **3 Sem Hrs**  
Prerequisite: ENG 112. This course will provide insight into American culture through the study of popular films. Major emphasis will be on American culture as reflected in the motion picture and the effect of the visual image portrayed in motion pictures on the perception of society and its history. Selected topics may vary from semester to semester. (45-0) W

**LIT 231 Modern Poetry** **3 Sem Hrs**  
Prerequisite: ENG 112. A study of the background, the developments, and the current state of modern poetry, with emphasis on poems by American and British authors. (45-0) O

**LIT 239 Science, Technology, and Literature** **4 Sem Hrs**  
Prerequisite: ENG 112. A study of science and technology themes in literature and journalism. Topics will include (1) works and biographies of men and women who combine science and literature in their lives; (2) Literature and the Machine in American Culture; (3) Humanistic Dimensions of Current Scientific and Technological Developments Reflected in Literature and Journalism; and (4) Using College and Community Resources to Interrelate Science and the Humanities. Activities will include interviews, film analysis, discussing articles from scientific and

humanistic publications, writing journals, short stories, poetry, research compositions on individual topics, making video tapes, and miniworkshops involving students, scientists, and writers. (45-0) O

**LIT 240 Science, Technology, and Literature** **4 Sem Hrs**  
Prerequisite: ENG 112. This course is the same as ENG 239, except to earn 4 credits the students will be required to do extra work under the instructor's supervision. Examples are: in-depth study of a humanist scientist - writer's work or biography; research essay on science and technology themes in literature; analysis of current articles in scientific and technological publications and their social and ethical implications. (60-0) O

**LIT 241 Introduction to Mythology** **3 Sem Hrs**  
Prerequisite: ENG 112. A study of the myths of Greece, Rome, and the Levant as they have appeared in The Iliad, The Odyssey, The Metamorphoses, the Aeneid and The Old Testament, with emphasis on their relationship to modern literature. (45-0) A

**LIT 242 British Literature** **3 Sem Hrs**  
Prerequisite: ENG 112. A selection of major British authors will be studied. Representative works from various periods will be read and analyzed. The student will learn to understand and critically appreciate the major ideas and literary forms of English literary history. (45-0) FW

**LIT 243 Literary Geography of the Third World** **4 Sem Hrs**  
An interdisciplinary course, seeking (through the study of native literatures) to understand and appreciate the cultures, problems and potentials of Third World countries (Africa, Latin America and Asia) in their geographical settings. Credit may be earned in ENG 243 or GEO 243 but not in both. (60-0) O

**LIT 245 Biblical Literature: Old Testament** **3 Sem Hrs**  
This course will be a critical study of the literature of the Old Testament. It will treat the Old Testament Canon in its historical development, and examine both the literary styles and the changing theological and ethical ideas. (45-0) O

**LIT 246 Biblical Literature: New Testament** **3 Sem Hrs**  
A critical study of the literature of the New Testament with some attention given to the Inter-Testamental literature. The literature will be studied in terms of its historical development. Some attention will be given to the canonization of the New Testament, to the different literary styles and to the theological and ethical ideas. (45-0) O

**LIT 251 Children's Literature** **4 Sem Hrs**  
Prerequisite: ENG 112 and a speech/oral communications course. A survey of literature for children in the elementary grades, aimed at developing techniques for using books with children, story telling, and the criteria for book selection. (60-0) A

**LIT 252 Young Adult Literature** **3 Sem Hrs**  
Prerequisite: ENG 112. A survey of young adult literature with emphasis upon history and integrity as a genre. Special attention will be given to the reading tastes of adolescents, literature selection and censorship issues, and the diversity of literature categories within the genre. (45-0) W

**LIT 266 American Studies I** **3 Sem Hrs**  
This is a team taught, interdisciplinary study of selected aspects of American life and culture conducted by staff of the History and English departments. Topics will be examined as they appear in history and in literature so the student can see responses the historical realities of American life. Credit may be earned in ENG 266 or HIS 266 but not in both. (45-0) O

**LIT 268 International Studies in Literature** **1-4 Sem Hrs**  
The student will do an in-depth study in one or more aspects of the literature or film of a country other than the United States. Includes class lectures and individual consultation. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. O

**LIT 269 Native North American Literature** **3 Sem Hrs**  
Prerequisite: ENG 112. A broad survey of the literature of North American Indians. Poems, dreams, and tales of various Indian tribes will



be examined, as well as biographies and autobiographies of important Indian leaders. Some reading in secondary sources will be required to facilitate an understanding of the culture which produced the literature. (45-0) FO

**LIT 271 American Literature I** 3 Sem Hrs  
Prerequisite: ENG 112. Major movements and themes in American literature as they appear in the works of important authors from the Puritan period to and including the Age of Romanticism are studied. (45-0) A

**LIT 272 American Literature II** 3 Sem Hrs  
Prerequisite: ENG 112. A continuation of English 271. Study of major movements and themes in American Literature from Walt Whitman through the Age of Realism and New Directions. (45-0) W

**LIT 274 Mexican-American Literature** 3 Sem Hrs  
Prerequisite: ENG 112 or permission of the instructor. The course will provide an introduction to Mexican-American literature, a survey of novels, short stories, plays poems, essays, and autobiographies written by contemporary Mexican-American authors. Course will also examine the Mexican -American as portrayed in American literature by such authors as John Steinbeck, Willa Cather, and Katherine Ann Porter. (45-0) O

**LIT 276 Contemporary American Fiction (1945 to Present)** 3 Sem Hrs  
Prerequisite: ENG 112. A study of trends, techniques and themes in recent American fiction. The student will read, analyze, and criticize the works of such writers as Updike, Cheever, O'Connor, Baldwin, Ellison, Bellow, Salinger, Malamud, and Mailer. (45-0) O

**LIT 277 Early African-American Literature** 3 Sem Hrs  
Prerequisite: ENG 112 or ENG 113 or instructor's permission. An introduction to early African-American writers, such as Wheatley, Garnet, Washington and Keckley and a survey of their works. Students will do oral projects which require reading secondary sources. Emphasis will be on poetry, narratives, letters and orations. (45-0) W

**LIT 278 Modern African-American Literature** 3 Sem Hrs  
Prerequisite: ENG 112 or ENG 113 or instructor's permission. An introduction to modern (1865-present) African-American writers, such as Hughes, Brooks, Hurston and Walker and their works. Students will do oral projects which require reading secondary sources. Emphasis will be on poetry, fiction, folk literature and drama. (45-0) S

**LIT 283 Literature of Mysticism** 3 Sem Hrs  
Designed to help students on an inner search for authenticity, personal integration and self awareness. The course will provide a variety of possibilities for developing innate potentialities and for achieving altered states of consciousness through literature, awareness exercises, meditation, chanting, fantasy journeys and journal writing. (45-0) FW

**LIT 284 Sports in Literature** 3 Sem Hrs  
Prerequisite: ENG 112. To introduce students to literature and journalism on sports themes as diverse as (1) sport as ritual; (2) the effects of victory and defeat; (3) how men, women, children, and minorities are affected by sports; (4) athletics and aging; (5) amateurs and professionals; and (6) non-traditional views of sports. (45-0) O

**LIT 285 Women in Literature** 3 Sem Hrs  
This course will discuss women's infinite variety as reflected in the literature of past and present, East and West. The first part will focus on images of the woman's private world—her relationship with others and her search for personal identity; the second part will concentrate on women's society—women's vocations, women and the arts, women and war, women and protest movements. The course will be literary rather than psychological or sociological in emphasis and will study both areas mentioned above with a literary context. The course is open to both men and women. (45-0) FW

**LIT 289 The Comic View in Literature** 3 Sem Hrs  
This course will analyze the nature, elements and types of comedy exemplified in literature; will explore the psychological and sociological functions of comedy portrayed by American and world writers; will study

the works of such writers as Geoffrey Chaucer, Jonathan Swift, Artemus Ward, James Lowell, Ambrose Bierce, Mark Twain, Oscar Wilde, Guy deMaupassant, Robert Benchley, James Thurber, Samuel Beckett, and Dorothy Parker. (45-0) O

## Medical Assistant Courses ♦♦♦♦♦♦♦♦♦♦

**MA 205 Medical Office Pharmacology** 1 Sem Hr  
Prerequisites: BIO 101, HSC 105, or permission of instructor. Necessary information to comply with the federal laws regarding accurate and secure drug records and the interpretation of prescriptions and communication of medication orders to other professionals. (15-0) WD

**MA 206 Pharmacology Applications** 1 Sem Hr  
Prerequisites: MA 205, MA 210, or permission of instructor. Preparation and administration of drugs commonly used in the medical office, and principles of self administration of medications. (15-0) WD

**MA 210 Assisting the Physician I** 4 Sem Hrs  
Prerequisites: BIO 101, BIO 102, HSC 105, MTH 117, and OSE 116, each with a minimum C (2.0) grade. Provides the opportunity to develop medical assisting skills used in a health care setting. Includes determination of vital signs, patient preparation, basic laboratory techniques and the care of office instruments. (45-45) F

**MA 220 Assisting the Physician II** 4 Sem Hrs  
Prerequisite: MA 210 with C (2.0) minimum grade. Provides the opportunity to develop skills for performing electrocardiograms, assisting in minor surgeries and assisting the physician in the administration of treatments and medications. (45-45) WD

**MA 230 Medical Assistant Internship** 4 Sem Hrs  
Prerequisite: MA 105, MA 220, HSC 140, HSC 205, OSE 152, OSE 157, OSE 172, OSE 255, OSE 266, OSE 276 each with a minimum C (2.0) grade and SPH 114. Provides the opportunity to observe and practice medical assisting skills in a health care setting. Seminars held on campus will provide a forum for discussion of office experiences. (40-140) SD

**MA 290-299 Special Projects in Medical Assisting** O

## Manufacturing Technology Courses ♦♦♦♦♦

**MFG 111 Manufacturing Processes** 3 Sem Hrs  
Survey of fundamental production processes including reduction, steel making, heat treating, foundry practice, hot and cold working, press work, and projection machining processes. A research paper and an oral report are required in this course. (45-0) FW

**MFG 124 Group Technology** 2 Sem Hrs  
Prerequisite: MFG 111 or employed in a manufacturing industry. Basic group technology as it relates to the design and machining of a part in the manufacturing work place. An introduction to design of a part for automation (CAD). (30-0) O

**MFG 212 Manufacturing Cell** 2 Sem Hrs  
Prerequisite: MFG 124 and CNC 160. An introduction to the manufacturing cell as it relates to the work place. Various cell information, i.e., tooling, material handling, layout, etc. (30-0) O

**MFG 216 Factory Automation** 2 Sem Hrs  
Prerequisite: MFG 212. A study of man-machine interface in a contemporary automated factory environment and of the factories of the future. Students work together on projects in group technology, CAD/CAM, JIT, part and material handling, synchronous production, ergonomics, and plant layout. (15-30) O

**MFG 230 Plastics Technology** 2 Sem Hrs  
Designed for the manufacturing technician, supervisor, or engineer who needs a basic knowledge of physical and chemical properties of plastic materials. Useful for those involved in the manufacturing, testing, or design of plastic products. (30-0) WE



**MFG 231 Plastic Part Design & Processing** 2 Sem Hrs  
Focuses on the elements of optimal part design, including polymer structure, short and long-term material properties, selection criterion, cost relationships, testing, tooling, and processing. Processes covered are injection molding, extrusion, and blow molding. (30-0) O

**MFG 232 Injection Molding Technology** 2 Sem Hrs  
Prerequisite: MFG 230 or permission of instructor. Reviews the fundamentals of materials, properties and characteristics, and covers in greater detail the injection molding process, inter-relationships of process parameters, basic injection mold design and construction, and plastic part design. (30-0) O

**MFG 282 Theory of Foundry Practices** 3 Sem Hrs  
Designed to acquaint the student with foundry practices and the theoretical basis for them. Subjects covered include properties of liquids, pure metals and alloys, equilibrium and non-equilibrium solidification, gating and feeding castings, cast iron metallurgy, molding and sand technology, refractory and melting practice, finishing operations casting inspection, and casting design. (45-0) O

**MFG 290-299 Special Projects in Manufacturing Technology**

## Machine Tool Operations Courses ♦♦♦♦♦

**MS 101 Machine Shop I** 4 Sem Hrs  
Prerequisite: Admission to the Machine Tool Operation Program. An orientation to the machine tool operation and machining industry. Emphasis will be placed on shop and industrial safety. Non-precision, precision measurement and basic layout are also included. (0-100) A

**MS 102 Machine Shop II** 4 Sem Hrs  
Prerequisite: MS 101. Designed to develop skills in using basic hand tools, selecting speeds and feeds on metal cutting machines, and selecting and applying cutting fluids. Basic instruction in the operation of metal saws is included. (0-100) A

**MS 103 Machine Shop III** 4 Sem Hrs  
Prerequisite: MS 101. Designed to provide basics of engine Lathe operation including; turning, facing, boring, and threading with emphasis on machine operations. (0-100) A

**MS 104 Machine Shop IV** 4 Sem Hrs  
Prerequisite: MS 101. The set-up and operation of a vertical and horizontal milling machine with emphasis on safety, cutter selection and accuracy. (0-100) A

**MS 105 Machine Shop V** 4 Sem Hrs  
Prerequisite: MS 101. The set-up and operation of sensitive, upright and racial arm drilling machines. Selection and use of carbide tolling also covered. (0-100) A

**MS 106 Machine Shop VI** 4 Sem Hrs  
Prerequisite: MS 101. The operation and set-up of surface grinders and drill grinding machines. Grinding wheel selection and safety also included. (0-100) A

**MS 107 Machine Shop VII** 4 Sem Hrs  
Prerequisite: MS 101 and 103. Advanced engine lathe operations including form turning, acme threading, internal threading and faceplate set-up. (0-100) A

**MS 108 Machine Shop VIII** 4 Sem Hrs  
Prerequisite: MS 101, 102 and 106. Set-up and operation of the tool and cutter grinder, cylindrical grinder and internal grinder. Emphasis on close tolerance control. (0-100) A

**MS 109 Machine Shop IX** 4 Sem Hrs  
Prerequisite: MS 101. Application of advanced measurement and inspection techniques using electronic equipment and gage blocks. Covers both linear and angular measurement, basic tool making techniques and advanced milling techniques. (0-100) A

**MS 112 Ferrous Heat Treatment** 2 Sem Hrs  
Designed to acquaint students with various forms of heat treatment applied to plain carbon steels, cast iron, alloy tool steels and stainless steel. Course will also include steel classification and machinability. (30-0) WD

**MS 113 Machining Processes** 2 Sem Hrs  
Course designed to familiarize students not majoring in the machine trade in the use and application of tool room machines. Student gains limited skills in use of lathes, drills, mills, instruments, grinders, and saws. (15-45) O

**MS 114 Machine Tools** 3 Sem Hrs  
Introduction to the industrial shop. Safety, materials, hand tools, precision instruments, drill presses, lathes, shapers, mills, grinders, and saws. (15-75) FW

**MS 115 Machine Tools II** 3 Sem Hrs  
Prerequisite: MS 114 or equivalent. The understanding of basic machine tool operations and the ability to read blueprints are required. Designed to give advanced training in machine tool operations and setups with emphasis placed on lathes, mills, grinders, saws, and computer numerical control. The student will be required to complete all the operations within print specifications. (15-75) FW

**MS 120 Machinist's Handbook** 2 Sem Hrs  
Emphasis on locating and applying information found in the Machinery Handbook. The use of mathematical formulae and tables will be covered. (30-0) WD

**MS 210 Machine Shop X** 4 Sem Hrs  
Prerequisites: MS 102, MS 104 and MS 109. The operation of the DeVlieg jig mill including: machine set-up, basic operations, operator responsibilities and safety. (0-100) O

**MS 211 Machine Shop XI** 4 Sem Hrs  
Prerequisite: MS 210. The operation of the Anilam Commando control in conjunction with the DeVlieg jig mill including: basic features, programming, and programmed machining using all available features. (0-100) O

**MS 212 Machine Shop XII** 4 Sem Hrs  
Prerequisite: MS 106 and 108, or permission of instructor. The operation of the Moore jig grinder including: safety, operator responsibilities, hole grinding, radius grinding and bottom grinding. (0-100) O

**MS 290-299 Special Projects in Machine Tool Operations** O

## Mechanical Technology Courses ♦♦♦♦♦

**MT 110 Machine Tool Calculations** 5 Sem Hrs  
Course satisfies the mathematical needs of tradespeople and technicians in the machine tool and drafting fields. Topics covered are whole numbers, fractions, decimals, metric conversions, precision instruments, ratio and percent, algebra, applied geometry, shop trigonometry, tapers, gears, belt and chain speeds, cutting speeds, and screw threads. Credit may be earned in MT 110 or WELD 110 but not both. (75-0) FW

**MT 125 Pre-Apprenticeship Mechanics** 3 Sem Hrs  
Study of physical principles as they relate to everyday work experiences. Space visualization, simple machine elements, forces on structures and bodies in motion, fluids at rest and in motion, heat and electricity. Designed as a course in pre-apprenticeship training program, but open to anyone desiring a basic understanding of mechanical principles. (45-0) O

**MT 150 Mechanical Principles in Electronic Design** 2 Sem Hrs  
Prerequisites: MTH 113 and PHY 101 or 111.  
Investigates the application of mechanical, fluid and thermal principles to the electronics industry. Through demonstrations, becomes familiar with machine and mechanical drive elements, dynamics and vibrations, material properties, instrumentation, hydraulics and pneumatics, and heat transfer and thermal expansion. (30-15)







**MTH 107 Algebra I** **3 Sem Hrs**  
Prerequisite: MTH 100 or High school equivalent recommended: A grade of "B" or better in MTH 100. Includes natural numbers, integers, first-degree equations and inequalities, special products, factoring, rational expressions and equations, graphs, and linear systems, exponents, and quadratic equations. (Equivalent to first-year high school algebra). (45-0)A

**MTH 109 Geometry** **2 Sem Hrs**  
Prerequisite: MTH 107 or one year of high school algebra. Study of two and three dimensional nomenclature with emphasis on applications involving angles, triangles, parallelograms, congruency and similarity of polygons, circles, spheres, prisms, pyramids, and cones. Designed for those persons who have not had a high school geometry course and plan to take trigonometry or other advanced math courses. (30-0) DW

**MTH 110 Mathematics for Elementary Teachers** **4 Sem Hrs**  
Prerequisite: MTH 107 or one year of high school algebra. Includes numeration systems, sets and their properties, classification of number systems (whole numbers through real numbers), operations and their properties, arithmetical algorithms, problem solving, statistical charts and graphs, geometric figures and their calculations, and measurement systems including metric. Variety of learning styles, manipulatives, and calculator and computer application uses. The National Council of Teachers of Mathematics Standards are incorporated. (60-0)A

**MTH 111 Applied Algebra** **4 Sem Hrs**  
Prerequisite: MTH 107 or one year of high school algebra. Recommended: A grade of "B" or better in algebra; MTH 109 advisable. Applications oriented for the technical student. Includes basic algebraic operation, linear equations, functions, graphing, determinants, exponents and radicals, quadratic equations, ratio, proportion and variation, common logarithms, and exponential equations. (60-0) F W

**MTH 113 Applied Trigonometry** **4 Sem Hrs**  
Prerequisite: MTH 111 or MTH 119 or two years of high school algebra. Recommended: A grade "B" or better in algebra. Application oriented for the technical student. Includes trigonometric functions with their graphs, solution of triangles, vectors, complex numbers, conics, inverse trigonometric functions, and trigonometric identities and equations. A CALCULATOR HAVING AT LEAST TRIGONOMETRIC AND INVERSE TRIGONOMETRIC FUNCTIONS IS REQUIRED. (60-0)W

**MTH 117 Math for Allied Health** **2 Sem Hrs**  
Prerequisite: MTH 100 or equivalent arithmetic skills. A brief review of Roman numerals, fractions, decimals, percentages, and ratios. Included is a study of the metric system and the Apothecaries' system with applications in converting from one system to another. Emphasis is on calculations involved in preparing solutions and giving medications. (30-0) A

**MTH 119 Intermediate Algebra** **4 Sem Hrs**  
Prerequisite: MTH 107 or one year of high school algebra. Recommended: A grade of "B" or better in algebra. Includes fundamental concepts of algebra and applications, equation solving, graphs, systems of linear equations, quadratic equations, algebraic fractions, exponents, radicals, functions, and logarithms. (60-A) A

**MTH 120 Finite Mathematics** **3 Sem Hrs**  
Prerequisite: MTH 119 or two years of high school algebra. Topics include mathematical modeling (polynomial and rational functions; their graphs and applications; and arithmetic and geometric progressions), systems of equations and inequalities, linear programming, and an introduction to probability (binomial distributions and graphing qualitative data). Computer applications of some topics will be covered. A calculator having at least exponentiation and logarithmic functions is required. (Those students planning to take MTH 161 should take MTH 151 rather than MTH 120.) (45-0) A

**MTH 121 Plane Trigonometry** **3 Sem Hrs**  
Prerequisite: MTH 119 or two years of high school algebra. Recommended: MTH 109 or another geometry course. Includes trigonometric functions and their graphs, solution of triangles, identities, trigonometric equations, inverse trigonometric functions, and complex numbers. A GRAPHING CALCULATOR IS RECOMMENDED, especially for those planning to take MTH 151; A SCIENTIFIC CALCULATOR IS ACCEPTABLE for use in this class. (45-0) A

**MTH 151 Pre-Calculus Mathematics** **4 Sem Hrs**  
Prerequisite: MTH 119 and MTH 121 or three years of high school college-preparatory mathematics including trigonometry. MTH 121 may be taken concurrently with instructor approval. Designed for students planning to take calculus. Includes a study of the elementary functions, equations and inequalities, systems of equations, review of trigonometry, and analytic geometry. A GRAPHING CALCULATOR IS REQUIRED. (60-0) A

**MTH 153 Algebra For Calculus** **3 Sem Hrs**  
Prerequisites: Two years of high school algebra and permission of the instructor. Provides a review of algebra as related to calculus topics of limits, differentiation, and integration. (45-0)

**MTH 160 Calculus for the Social and Managerial Sciences** **4 Sem Hrs**  
Prerequisite: MTH 120 or 151 or a least three and a half years of high school-college preparatory mathematics. Designed to satisfy the mathematics requirements for students majoring in business or social sciences. Topics include graphing, differentiation and integration of functions (algebraic, exponential, and logarithmic), and the use of these techniques within business and economic models. A CALCULATOR HAVING AT LEAST EXPONENTIAL AND LOGARITHMIC FUNCTIONS IS REQUIRED. (60-0) A

**MTH 161 Analytic Geometry and Calculus I** **4 Sem Hrs**  
Prerequisite: MTH 151 or four years of high school college-preparatory mathematics including trigonometry. Includes functions, graphs, limits, continuity, derivatives and their applications, integrals, as well as differentiation and integration of exponential and logarithmic functions. A GRAPHING CALCULATOR IS REQUIRED. (60-0)

**MTH 162 Analytic Geometry and Calculus II** **4 Sem Hrs**  
Prerequisite: MTH 161. Includes applications of integrals, integration techniques, limits and indeterminate forms, improper integrals, infinite series, polar coordinates, parametric equations, as well as differentiation and integration of trigonometric and hyperbolic functions. A GRAPHING CALCULATOR IS REQUIRED. (60-0)

**MTH 208 Elementary Statistics** **3 Sem Hrs**  
Prerequisite: MTH 119 or two years of high school algebra. Elementary statistical concepts studied include frequency distributions, measures of central tendency and dispersion, probability, confidence intervals, hypotheses testing, linear correlation and regression, chi-square, ANOVA. A calculator having basic statistical functions is required. (45-0) A

**MTH 211 Applied Calculus** **5 Sem Hrs**  
Prerequisite: MTH 113. Application oriented, for the technical student. Conics, differentiation and integration of algebraic, trigonometric, logarithmic and exponential functions. Emphasis on the application of the derivative and integral. (75-0) O

**MTH 231 Introduction to Quality Engineering Statistics I** **3 Sem Hrs**  
Prerequisite: MTH 119. An introduction to statistical concepts including descriptive methods, principles of probability, discrete probability distributions, continuous distributions, functions, sampling plans and sampling distributions, hypothesis testing of means and proportions, and confidence intervals. (45-0) O

**MTH 232 Introduction to Quality Engineering Statistics II** **3 Sem Hrs**  
Prerequisite: MTH 231. Continuation of topics presented in Introduction to Quality Engineering Statistics I. Topics include: analysis of variance, control charts, sampling plans, product reliability master plan design and analysis, chi-square contingency table test, correlation analysis, simple and multiple linear regression analysis, design of experiments, and non-parametric statistics. (45-0) O

**MTH 233 Taguchi Methods I** **1 Sem Hr**  
Prerequisites: MTH 231 and MFG 244. Taguchi Methods I is intended as an overview of the Taguchi method of experimental design. The course will review the three major phases of the Taguchi method: system design; parameter design; and tolerance design. Credit may be earned in MTH 233 or MFG 246, but not both. (15-0) O







**MUS 139 Keyboard Practicum** 2 Sem Hrs  
Prerequisites: MUS 100 and MUS 131 and permission of instructor. Designed to develop specific musical skills as well as sensitivity to ensemble performance. Literature will represent all historical periods and styles in both the secular and sacred genres. Sightreading, transposing, harmonizing, improvising and modulating will be stressed *as they relate to specific needs to accompanists.* (30-0) O

**MUS 140 Introduction to MIDI Technology** 3 Sem Hrs  
Prerequisite: MUS 100. Presents Music Instrument Digital Interface electronic technology. Emphasizes creating and manipulating sounds and musical sequences with computers and MIDI capable keyboards and sound modules. Requires a musical project using this technology. (45-0) FW

**MUS 145 Elements of Conducting** 2 Sem Hrs  
Instruction in baton technique and basic choral conducting procedures. Experience in actual conducting—both instrumental and vocal. Practice in score reading and study of transposing instruments. Investigation of problems of intonation, balance, ensemble, tempo and tone quality as encountered in rehearsal. The class itself will be used as a performing group in teaching the above whenever possible. In some instances, recordings will be used to illustrate certain points. (30-0) O

**MUS 150 Ensemble Experience I** 1 Sem Hr  
May be taken to document choral ensemble activity in groups other than Delta College credit granting choirs. Approval of instructor required before participation. Approve documentation must be submitted to instructor at the end of semester's activity. (30-0) FWS

**MUS 151 Ensemble Experience II** 1 Sem Hr  
Prerequisite: MUS 150. May be taken to document choral ensemble activity in groups other than Delta College credit granting choirs. Approval of instructor required before participation. Approved documentation must be submitted to instructor at the end of semester's activity. (30-0) FWS

**MUS 154 Choir I** 1 Sem Hr  
Previous high school and/or church choir experience is recommended. Directed toward the study of representative choral music and public performances in college and community activities. Additional choir in sequence: MUS 155, 254, 255. (0-45) FW

**MUS 155 Choir II** 1 Sem Hr  
Continuation of Choir I. (0-45) FW

**MUS 156 Jazz Choir I** 1 Sem Hr  
Prerequisite: Audition/permission prior to semester registration. Performance group specializing in vocal jazz. Solo, small group, and ensemble numbers will be performed by members. Other idioms, such as blues, rock, and theater pieces will also be performed. (0-45) FW

**MUS 157 Jazz Choir II** 1 Sem Hr  
Continuation of MUS 156. (0-45) FW

**MUS 160 Concert Band I** 1 Sem Hr  
Prerequisite: Band experience in high school or the equivalent. (0-30) O

**MUS 161 Concert Band II** 1 Sem Hr  
Continuation of Concert Band I. (0-45) O

**MUS 162 Orchestra** 2 Sem Hrs  
Prerequisite: Audition or permission of instructor. Full orchestral experience involving the study and performance of music ranging from show tunes and theater music to standard masterpiece repertoire. Participation in the orchestra is open to all who qualify as serious performers on their instruments, i.e., high school students, college students, or interested adults living in surrounding communities. (0-45) O

**MUS 163 The Jazz Experience** 3 Sem Hrs  
Development of jazz from Gospel Music and Black secular roots. A stylistic history will be presented scanning Dixieland Jazz, Big Band Jazz, Combo Jazz of the last 20 years, and contemporary Big Band Electric Jazz. The course will include a short history of rock and roll. This

is primarily a listening course with topical lectures designed for the general student, however, students with advanced musical skills will also be able to learn some additional techniques of improvisation and arranging. (45-0) O

**MUS 165 Chamber Choir** 1 Sem Hr  
*Prerequisite: Selected through audition. Auditions prior to the semester registration.* Performing group available with frequent public appearance potential. (0-30) O

**MUS 166 Stage Band** 1 Sem Hr  
Prerequisite: High school experience in band or instructor's permission. This ensemble offers performance experience in big band jazz, swing and pop styles. Some instruction in improvisation is included. The group performs for several on-campus and off-campus concerts each semester. (0-15) O

**MUS 167 Flute Choir** 1 Sem Hr  
Prerequisite: Two years of band experience or equivalent. Consultation with the director will determine eligibility for the group with regard to the inclusion of additional wind or string instruments. (0-30) O

**MUS 168 Gospel Choir** 2 Sem Hrs  
Specializes in the performance of Gospel and Soul music. Students will become familiar with both types of music and participate in performances on and off campus. (30-0) FW

**MUS 201 Theory-Basic Music III** 4 Sem Hrs  
Prerequisite: MUS 102 or permission of instructor. Second-year music theory for music majors involving sophomore level aural and written theory with keyboard. (60-15)

**MUS 202 Theory-Basic Music IV** 4 Sem Hrs  
Prerequisite: MUS 201. Second-year music theory for music majors involving sophomore level aural and written theory with keyboard. (60-15) W

**MUS 211 Music History I** 3 Sem Hrs  
Prerequisite: MUS 112 or permission of instructor. An in-depth study of music of ancient times to the Seventeenth Century. Required for music majors. (45-0) F (every two years)

**MUS 212 Music History II** 3 Sem Hrs  
Prerequisite: MUS 112 or 211 or permission of instructor. A continuation of Music 211 with a study of music from the Seventeenth Century to present with emphasis on form and style. Required for music majors. (45-0) W (every two years)

**MUS 231 Techniques and Materials of Piano** 3 Sem Hrs  
Prerequisite: one year theory or permission of instructor. This course concentrates specifically on the problems of developing strong piano techniques representative of beginning into intermediate piano study. In addition to the texts, the literature of the piano will also be studied extensively. (45-0) F

**MUS 232 Advanced Techniques and Materials of Piano** 3 Sem Hrs  
Prerequisite: MUS 213 or permission of instructor. The course concentrates specifically on the problems of developing strong piano techniques from intermediate study to very advanced study. The students, themselves, will perform and be critiqued by the instructor or visiting artist in master class format. In addition to the texts, the literature of the piano will also be studied extensively. (45-0) W

**MUS 238 Voice II** 2 Sem Hrs  
Prerequisite: MUS 138 or instructor's consent. Continuation of work begun in MUS 138-Voice I, work on fundamentals and skills of singing, through the study and performance of songs in the English, American, Italian and German Literature. (30-0) O

**MUS 250 Ensemble Experience III** 1 Sem Hr  
Prerequisite: MUS 151. May be taken to document choral ensemble activity in groups other than Delta College credit granting choirs. Approval of instructor required before participation. Approved documentation must be submitted to instructor at the end of semester's activity. (30-0) FWS



**NA 112 Creative Activities for/with Children 3 Sem Hrs**  
(NA 112, 113, 114, 118, and 160 to be taken concurrently OR WITH PERMISSION OF PROGRAM COORDINATOR.) Identification of a wide range of resources to assist in planning, developing, and presenting creative activities for children. Emphasis will be placed on age, developmental, and social appropriateness of the activities. (45-0) FD

(NA 112, 113, 114, 118, and 160 to be taken concurrently OR WITH PERMISSION OF PROGRAM COORDINATOR.) Designed to give students basic skills to develop positive relationships with children. Emphasis will be on recognizing and implementing behavior management techniques, identifying components of communication, and applying effective methods to help children deal with self-concept, feelings, conflict, and cooperation. (45-0) FD

(NA 112, 113, 114, 118, and 160 to be taken concurrently OR WITH PERMISSION OF PROGRAM COORDINATOR.) Designed to develop skills to recognize and identify physical, intellectual and social traits in children from birth through early childhood, whether abnormal or normal and how to effectively intervene if necessary. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or associate degree. (45-0) FD

(NA 115, 116, 119, 120, 161 and a selected elective to be taken concurrently OR WITH PERMISSION OF PROGRAM COORDINATOR.) Designed to develop skills in order to identify and apply the elements of physical, intellectual, moral, emotional, and social development of children from six years of age through adolescence. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or associate degree. (45-0) WD

(NA 115, 116, 119, 120, 161 and a selected elective to be taken concurrently OR WITH PERMISSION OF PROGRAM COORDINATOR.) An overview of models of family relationships in order to identify similarities and differences, sex roles and stereotyping, the effect of changes in society, and the relationship of the nanny to a variety of family situations. (45-0) WD

(NA 112, 113, 114, 118, and 160 to be taken concurrently OR WITH PERMISSION OF PROGRAM COORDINATOR.) An introduction to the basic knowledge of infant and child care in the areas of physical care, health care, home safety, poison control, basic first aid, and CPR for infants, children and adults. A student must earn a grade of "C" (2.0) or better in this course to obtain a certificate or associate degree. (45-0) FD

(NA 115, 116, 119, 120, 161 and a selected elective will be taken concurrently OR WITH PERMISSION OF PROGRAM COORDINATOR.) Information will be provided on basic nutrition for all ages and an awareness of ethnic, religious, or health considerations in the preparation of food. Demonstrations will be included on home-making skills related to the care of children's clothing, food preparation and kitchen safety. (45-0) WD

(NA 115, 116, 119, 120, 161 and a selected elective to be taken concurrently OR WITH PERMISSION OF PROGRAM COORDINATOR.) Information will be provided on basic etiquette appropriate to the types of situations a nanny may experience and an awareness of the personal skills and professional preparation necessary to employment as a nanny. (45-0) WD

Prerequisite: MUS 250. May be taken to document choral ensemble activity in groups other than Delta College credit granting choirs. Approval of instructor required before participation. Approved documentation must be submitted to instructor at the end of semester's activity. (30-0) FWS

## Continuation of Choir II. (0-45) FW

## Continuation of Choir III. (0-45) FW

## Continuation of MUS 157. (0-45) FW

## Continuation of MUS 256. (0-45) FW

## Continuation of Concert Band II (0-45) O

## Continuation of Concert Band III. (0-45) O

Capstone activities include a jury in area of emphasis, as well as demonstration of competence in all areas of previous certificate course work, and non-credit activities. (30-0) FW

**ALL APPLIED MUSIC COURSES.** Prerequisite: Permission of music department. Private instruction/lessons provided and a minimum number of hours of weekly practice is required. A jury examination will be held at the end of each semester.

MUS 171	Applied Music Piano Minor—Freshman	1 Sem Hr	O
MUS 172	Applied Music Piano Minor—Freshman	1 Sem Hr	O
MUS 271	Applied Music Piano Minor—Sophomore	1 Sem Hr	O
MUS 272	Applied Music Piano Minor—Sophomore	1 Sem Hr	O
MUS 173	Applied Music Instrumental Minor—Freshman	1 Sem Hr	O
MUS 174	Applied Music Instrumental Minor—Freshman	1 Sem Hr	O
MUS 273	Applied Music Instrumental Minor—Sophomore	1 Sem Hr	O
MUS 274	Applied Music Instrumental Minor—Sophomore	1 Sem Hr	O
MUS 175	Applied Music Voice Minor—Freshman	1 Sem Hr	O
MUS 176	Applied Music Voice Minor—Freshman	1 Sem Hr	O
MUS 275	Applied Music Voice Minor—Sophomore	1 Sem Hr	O
MUS 276	Applied Music Voice Minor—Sophomore	1 Sem Hr	O
MUS 181	Applied Music Piano Major—Freshman	2 Sem Hrs	O
MUS 182	Applied Music Piano Major—Freshman	2 Sem Hrs	O
MUS 281	Applied Music Piano Major—Sophomore	2 Sem Hrs	O
MUS 282	Applied Music Piano Major—Sophomore	2 Sem Hrs	O
MUS 183	Applied Music Instrumental Major—Freshman	2 Sem Hrs	O
MUS 184	Applied Music Instrumental Major—Freshman	2 Sem Hrs	O
MUS 283	Applied Music Instrumental Major—Sophomore	2 Sem Hrs	O
MUS 284	Applied Music Instrumental Major—Sophomore	2 Sem Hrs	O
MUS 185	Applied Music Voice Major—Freshman	2 Sem Hrs	O
MUS 186	Applied Music Voice Major—Freshman	2 Sem Hrs	O
MUS 285	Applied Music Voice Major—Sophomore	2 Sem Hrs	O
MUS 286	Applied Music Voice Major—Sophomore	2 Sem Hrs	O

Prerequisite: Permission of program director required. Capstone activities include a jury in area of emphasis, as well as demonstration of competence in all areas of previous certificate course work, and non-credit activities. (30-0) FW

**MUS 290-299 Special Project in Music**



## 2 Sem Hrs

**NUR 103 Nursing 3**

Prerequisite: NUR 102 with C (2.0) minimum grade. Provides the student with guided learning experiences to develop beginning competence in planning, implementation, and evaluation of selected nursing principles. Opportunity to practice the principles and skills provided in both simulated and actual patient care settings. (Class meets for five weeks.) D

## 1 Sem Hr

**NUR 105 Nursing 5**

Prerequisite: NUR 150 with a grade of "C" (2.0) or better. Introduces basic care of the child bearing family. Includes the antepartum, uncomplicated labor/delivery, postpartum and normal newborn experience. Provides opportunities to apply nursing process and nursing diagnostic techniques in selected health care settings. (Some "on call" or evening experiences may be required/) (20-75)

## Aide Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

## 9 Sem Hrs

**NUR 106 Nursing 6**

Prerequisite: NUR 150 with a grade of "C" (2.0) or better. Introduces care of the child and family experiencing illness/hospitalization. Emphasizes concepts of growth and development, and biopsychosocial needs of clients from infancy through adolescence. Provides opportunities to practice nursing process and nursing diagnosis skills in selected health care settings. (20-75)

## Nursing Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

## 2 Sem Hrs

**NUR 120 Medication Administration**

Presents an overview of drug classifications, dosages and responsibilities of administration of prescribed and “over-the-counter” medications. Includes content for those entering health occupation programs or for consumers seeking information regarding medications.

**NUR 125 Strategy For Success**

**Prerequisite:** Current validation for RN nursing program. Identifies potential barriers to success in nursing programs. Provides strategies and skills to enhance success. Emphasizes critical thinking, problem-solving, conceptual thinking, and study skills related to reading, writing and test taking. Includes time management, stress reduction, learning styles, communication skills and building self-esteem techniques. (30-0)

**NUR 150 Basic Nursing Care of Adult Client**

Prerequisite: NUR 101-B with minimum grade of "C" (2.0) or better. Emphasizes basic nursing care of the adult client. Includes commonly occurring medical or surgical health care problems related to sensory and motor function, gaseous exchange and transportation of substances to and from the cells, alterations in endocrine, musculoskeletal, immunologic, genitourinary, gastrointestinal, gynecological, integument and neurologic function. (Some "on call" or evening experiences may be required.) (75-180)

**NUR 161 Transition - Basic Principles of Adult Care 2 Sem Hrs**

Prerequisite: LPN Licensure, 1 year full time/equivalent work experience and validation for nursing program. Introduces the nursing process as a framework for nursing concepts. Emphasizes Gordon's Functional Health Patterns related to aseptic technique, nutrition, medication administration, fluid and electrolyte regulation and acid-base balance. (30-0) S

**NUR 162 Role and Function of the RN 2 Sem Hrs**

Prerequisite: NUR 161 with a grade of "C" (2.0) or better, or concurrent with NUR 161. Discusses the role and function of the registered nurse, including history of nursing, nursing theorists and social policy. Emphasizes communication and math skills, ethical and legal implications for nursing, educational preparation for various nursing roles, image of nursing, political action, theories and models of practice, teaching/learning principles, concepts of ethnic and cultural diversity. (30-0) S

**NUR 163 Advanced Principles of Adult Care for the LPN 5 Sem Hrs**

**Prerequisite:** Completion of NUR 162 with a grade of "C" or better. Provides opportunities to apply nursing process to the care of the adult patient/client in various health care settings. Emphasizes commonly occurring health care problems related to sensory and motor function, gaseous exchange, transportation of substances to and from cells, alterations in endocrine, musculo-skeletal, immunologic and neuro function. (45-90)S

**NOTE: the following courses are subject to the Nursing Progression and Retention Policies.**

**NUR 101 Nursing I**

**Prerequisite:** Admission to Nursing Program. The principles of the biological, physical, and social sciences are used as the foundation to introduce the principles of professional nursing practice as defined in the Nursing Practice Act of Michigan. The legal, historical, and role expectations in nursing are studied and applied. The nursing process forms the structure for developing specific nursing skills which are practiced in a simulated setting. (Class meets for five weeks.) D

**NUR 101A Nursing Fundamentals**

Prerequisite: Current validation for RN program. Introduces the role of professional nursing practice based upon principles of the biological and social sciences. Identifies legal and ethical aspects of nursing practice. Emphasizes specific concepts and nursing process as the framework for nursing diagnosis and practice skills. Includes opportunities to practice specified nursing clinical skills and/or procedures in a simulated laboratory setting. (4)

**NUR 101B Care of the Elderly Adult**

Prerequisite: NUR 101-A with a grade of "C" (2.0) or better. Introduces concepts of gerontological nursing. Emphasizes the application of nursing process and nursing diagnoses in the clinical laboratory setting. Provides opportunities to practice basic clinical nursing skills and techniques in the care of older adults in a variety of environments and health care settings. (30-90)

**NUR 102 Nursing 2**

Prerequisite: NUR 101 with C (2.0) minimum grade. Introduces the student to the study and practice of selected principles and skills required in the practice of nursing. The nursing process is used in the acquisition and practice of selected skills. Opportunity to practice the skills provided in a simulated clinical setting. (Class meets for five weeks.) D



**NUR 164 Maternal/Child Health for the LPN** **5 Sem Hrs**  
Prerequisite: NUR 163 with a grade of "C" (2.0) or better. Provides opportunities to apply nursing process to care for the growing family unit in a variety of community health care settings. Emphasizes meeting the biopsychosocial needs of the client and family. (45-90) F

**NUR 209 Psychosocial Nursing** **3 Sem Hrs**  
Prerequisite: NUR 150 or NUR 164 with a grade of "C" (2.0) or better. Provides opportunities, in selected health care/mental health agencies, to apply pertinent theory and nursing intervention skills to care of patients and families experiencing emotional distress. (20-75)

**NUR 241 Human Sexuality in Health Care** **2 Sem Hrs**  
Designed primarily for individuals who have had experience and/or education in a health care field. Focus upon characteristics of human sexuality through the life cycle. Designed to increase health care workers' sensitivity, comfort and clinical skills when dealing with the various aspects of sexuality in therapeutic situations. (30-0)O

**NUR 250 Nursing Care and Management Throughout the Health Continuum** **9 Sem Hrs**  
Prerequisite: NUR 209 with a grade of "C" (2.0) or better. Emphasizes concepts, principles, and content related to the delivery of nursing care to clients experiencing multiple acute/chronic health problems. Provides opportunities to use nursing process, nursing diagnostic, and complex decision making skills in a variety of health care settings. Includes concepts related to professionalism and changing health care delivery systems. Explores the change in role from student to graduate nurse. (45-270)

**NUR 282 Major Health Problems of Older Adult** **2 Sem Hrs**  
Prerequisite: Open to licensed nurses/student nurses/other health care personnel or permission of instructor. Focuses on major health problems identified as critical for the frail elderly in the health care system. Mobility impairment, sensory losses, confusion, incontinence, activity intolerance, and the effects of diminished social support systems will be covered. Emphasis will be on nursing interventions which promote the highest possible level of independent function and wellness. (30-0)

**NUR 290-299 Special Projects in Nursing** **O**

## Office Systems Education Courses ♦♦♦♦♦

**OSE 108 Personal Keyboarding** **1 Sem Hr**  
Introduces the touch system of keyboarding and basic word processing functions, features, and commands necessary to produce letters and reports on the computer. Outside lab assignments are required. (15-0) O

**OSE 116 Introduction to the Medical Office** **2 Sem Hrs**  
Introduces the pegboard system including day sheets, patient ledgers and receipts; emphasizes the accurate recording of charges, payments and adjustments. Also introduces basic accounting procedures including journalizing, posting, banking, payroll, and preparation of the income statement and balance sheet. (30-0) FWD

**OSE 145 Integrated Office Systems** **4 Sem Hrs**  
Prerequisite: OSE 170 or demonstrated typing skill. Office systems technology will be introduced through the study of terminology, employee roles, electronic equipment, office environments, and electronic office procedures. Integrated office applications will be studied through the use of word processing, database, spreadsheet and operating system software. Projects are assigned on microcomputers. (60-0) FW

**OSE 150 Business English** **2 Sem Hrs**  
The development of sound English usage skills. Emphasis is placed on those language skills that will enable students to perform effectively and efficiently in an information-based work environment. Projects will be assigned using microcomputers. (30-0) A

**OSE 151 Business Communications I** **3 Sem Hrs**  
Includes principles and composition of effective basic business letters and memos as well as accuracy in grammar, spelling, punctuation, sentence structure, and format. Typewritten assignments are required. (45-0) A

**OSE 152 Business Communications II** **3 Sem Hrs**  
Prerequisite: Business Communication I (OSE 151) with a minimum grade of C (2.0). Studies effective verbal and nonverbal communication in business. Emphasis placed on audience reaction, logical organization, tone, clarity, and accuracy. Involves career information, the research process, and reporting. Typewritten and oral assignments are required. (45-0) A

**OSE 153 Police Report Writing** **1 Sem Hr**  
Prerequisite: Concurrent enrollment in CJ 101, PEH 168, and PE 201. Requires a grade of "C" (2.0) or better to complete the Basic Police Training Academy. Develops and enhances writing skills necessary to law enforcement including preparation of police reports, incident reports, summaries of witness and complaint interviews, and criminal case summaries. (15-0)

**OSE 155 Editing** **2 Sem Hrs**  
Prerequisite: OSE 171 or demonstrated typing skill. Development of proofreading and editing skills. A focus on a review of business writing principles and the use of revision symbols. Emphasis is placed on revising both format and content of business documents. Projects will be assigned using microcomputers. (30-0) A

**OSE 157 Filing** **2 Sem Hrs**  
Prerequisite: OSE 170 or equivalent. Principles and practices of effective records management for manual and automated records systems using alphabetic, numeric, chronologic, and subject methods will be introduced as well as database concepts needed for understanding automated records storage and retrieval methods. Concepts will include adding, modifying, sorting, designing, searching, and printing. PC File+ will be used. Outside lab assignments will be required. (30-0) A

**OSE 158 Records Management** **3 Sem Hrs**  
Prerequisite: OSE 171 or demonstrated keyboarding skill. Includes the complete records cycle, development of filing procedures, operations and records control, centralized and decentralized systems, cost analyses, selection of equipment and supplies, forms and correspondence control, micrographics, automated information management, records management career opportunities, electronic storage, retrieval, and printing. Requires outside lab assignments and field trip. (45-0) FE in even-numbered years.

**OSE 165 Notetaking** **1 Sem Hr**  
Increases notetaking skills through intensive study of an easy abbreviated writing system. Open to all students. (15-0) FW

**OSE 170 Keyboarding I:Keyboard** **2 Sem Hrs**  
Includes the touch system of the 10-key pad and the alphabetic, numeric, and symbol keys of the typewriter or microcomputer keyboard. Keyboarding speed requirement for a passing grade is 20 GWAM (3 min., 5 errors max.). Ten-key pad speed requirement for a passing grade is 72 keystrokes per minute (7 min., 2 errors max.). Outside lab assignments required. Individualized grading arranged for students with physical limitations who are not entering the keyboarding sequence (OSE 171, 172, and 273). Before advancing to an upper-level keyboarding course, students may need to take a skill building course, e.g. OSE 178 or OSE 179. (30-0)

**OSE 171 Keyboarding II:Format** **3 Sem Hrs**  
Prerequisite: OSE 170 with C (2.0) grade minimum or keyboarding skill. Provides skill improvement, introduction to current business letter and report styles, and basic formatting skills of page layout, centering, tabs, and multi-page documents using the microcomputer. Before advancing to OSE 172, students may need to take a skillbuilding course, e.g. OSE 178 or OSE 179. (45-0)

**OSE 172 Keyboarding III:Intermediate** **3 Sem Hrs**  
Prerequisite: OSE 171 or OSE 187 or equivalent completed with a minimum grade of C (2.0). Develops speed and accuracy in producing business and personal letters, rough drafts, manuscripts, outlines, and tables. Straight copy speed requirement for a C (2.0) grade is 40-42 GWAM (5 min., 5 errors max.). Lab assignments required. (45-0)



**OSE 175 Machine Calculation****1 Sem Hr**

Proficiency with 10-key keypad and basic operations of electronic display and printing calculators. Outside lab assignments are required. (15-0) A

**OSE 178 Keyboard Skillbuilding I****2 Sem Hrs**

Prerequisite: OSE 170 or equivalent. Emphasizes the development of keyboarding speed and accuracy using the Cortez Peters Championship Typing program. For students with keyboarding experience and/or skill up to 45 wpm. May be taken concurrently with OSE 171—Keyboarding II: Format or OSE 172—Keyboarding III: Intermediate. Outside lab assignments are required. (30-0) A

**OSE 179 Keyboard Skillbuilding II****2 Sem Hrs**

Prerequisite: OSE 171 or equivalent. Emphasizes the development of keyboarding speed and accuracy using the Cortez Peters Championship Typing program. For students typing 45 or more words per minute. May be taken concurrently with OSE 172—Keyboarding III: Intermediate or OSE 273—Keyboarding IV: Advanced. Outside lab assignments are required. (30-0) A

**OSE 181 Microsoft Word****3 Sem Hrs**

Prerequisite: OSE 171 or equivalent. Provides an electronic tool to create, format, edit, print, and retrieve documents. Further emphasis will be on the following: the dictionary, Thesaurus, automatic windowing and graphic capabilities, mathematical functions, and merging functions. Use of a mouse system is included. Outside lab assignments required. Students cannot substitute OSE 181 credit for any of the following keyboarding classes: OSE 171, 172, or 273. (45-0) FW

**OSE 187 WordPerfect Beginning****1 Sem Hr**

Prerequisite: OSE 170 or equivalent keyboarding skill. Provides the student with an introduction to the WordPerfect word processing program. Students will create, format, save, retrieve, edit, and print documents. Outside lab assignments are required. The course is designed to acquaint students with the WordPerfect software utilized in several OSE courses. Credit may be earned in OSE 101 or OSE 187 but not in both. (15-0) A

**OSE 188 WordPerfect Intermediate****2 Sem Hrs**

Prerequisite: OSE 187 or equivalent or permission of instructor. This course further develops a practical working knowledge of the WordPerfect software package. Character, line, and page formatting features will be expanded upon. Block operations, forms design and selection, and other special features will be covered. Outside lab assignments are required. Students cannot substitute OSE 188 credit for any of the following keyboarding classes: OSE 171, 172, or 273. (30-0) AE

**OSE 189 WordPerfect Advanced****3 Sem Hrs**

Prerequisite: OSE 172 or OSE 188 or equivalent or permission of instructor. Continuation of the WordPerfect series. Focuses on advanced merging and table features, graphics, macros, styles, columns, and sort and select. Integrates these features with desktop publishing principles to design business publications. Outside lab assignments are required. (45-0) FW

**OSE 191 WordPerfect for Windows****3 Sem Hrs**

Prerequisite: OSE 171 or equivalent. Uses WordPerfect for Windows to format, create, edit, save, print, and retrieve documents in an integrated graphical environment. Outside lab assignments are required. Students cannot substitute OSE 191 credit for any of the following keyboarding classes: OSE 171, 172, or 273. (45-0) FW

**OSE 192 Beginning W/P for Windows****2 Sem Hrs**

Prerequisite: OSE 170 or equivalent. Introduces the WordPerfect for Windows word processing program. Provides opportunities to create, format, save, retrieve, edit, and print documents. (30-0)

**OSE 194 Microsoft Windows****1 Sem Hr**

Prerequisites: OSE 170 or demonstrated keyboarding skill and CIS 133. Provides the student with a total computer environment, including: onboard desktop applications (clock/calendar, notepad, cardfile, calculator, and clipboard); graphic painting program; and graphic word-processor. Windows provides the computer user with the means to view

several programs at one time; transfer information between programs; and merge compatible documents from different programs through the use of drop-down menus, icons, dialog boxes, and title/menu bars. Use of a mouse system is included. Outside lab assignments required. (15-0) FW

**OSE 195 Desktop Publishing - PageMaker****1 Sem Hr**

Prerequisite: OSE 170, CIS 118 and knowledge of a wordprocessing package. Develops a thorough knowledge of a desktop publishing package with creation of a variety of finished documents. (30-0)

**OSE 196 Desktop Publishing/Windows****2 Sem Hrs**

Prerequisite: OSE 170, 145 or CIS 133 or equivalent and thorough knowledge of one word processing program. Windows provides a total computer environment, including desktop applications; graphic painting program word processor and a view of several programs at one time. Capability to transfer/ merge information with compatible programs. DESKTOP PUBLISHING provides electronic tool to completely develop/design finished documents using text/graphics merging. Incorporates use of compatible word processing and graphic programs, scanners, laser printers and mouse system. Outside lab assignments required. (30-0) FW

**OSE 197 DPT - Page Layout/Design****2 Sem Hrs**

Prerequisites: OSE 195 or 196; or equivalent (all with a minimum grade of C or 2.0). Provides advanced skills in desktop publishing emphasizing page layout and design. Students will produce, manage, and save graphic images using graphic drawing/painting, clipart and scanning programs; will explore scanning and manipulation of photographs; and will learn gray scale reproduction techniques. Outside lab assignments will be required. (30-0) W

**OSE 201 MMI: Presentation Graphics****2 Sem Hrs**

Prerequisite: OSE 145 or CIS 133. (OSE students should take OSE 145; CIS students should take CIS 133). Develops beginning/intermediate skills in presentation and graphic layout for business and education presentations. Includes computer projection and creation of computer generated transparencies and handouts. Focuses on developing attractive, professional, effective, and well-timed visuals for different business settings using computer graphic presentation software. Credit may be earned in either CIS 201 or OSE 201 but not in both. (30-0) A

**OSE 245 Advanced Software Applications****2 Sem Hrs**

Prerequisites: OSE 273 (or currently) OSE 145, 172, CIS 132, and CIS 260; (all with a minimum grade of "C") or equivalent as determined by the instructor. Through the integration of specialized software packages, the following capabilities will be explored: a graphical windowing environment; manipulation/management of word processing, spreadsheet, database, and graphic files; and an introduction to electronic communications, scheduling, calendaring, and on-line calculating. Use of a mouse system will be included. Outside lab assignments will be required. (30-0) FW

**OSE 254 Medical Insurance I****3 Sem Hrs**

Prerequisite: HSC 105 and BIO 101 or permission of instructor. Includes diagnostic and procedure coding; basic insurance concepts and terminology used by health insurance carriers; completion of claim forms for commercial insurance companies, Blue Cross-Blue Shield of Michigan, Medicare and Medicaid. (45-0) F

**OSE 255 Medical Insurance II****3 Sem Hrs**

Prerequisite: OSE 254 with a minimum grade of C (2.0) or permission of instructor. An in-depth study of Michigan insurance claims processing including case study, coordination of benefits, adjustments, deductibles, co-pays, posting of payments and resolution of reimbursement problems. Insurance claims for commercial carriers, Blue Cross-Blue Shield, Medicare, Medicaid and CHAMPUS. (45-0) W

**OSE 266 Medical Office Practice****3 Sem Hrs**

Prerequisites: Sophomore standing, OSE 151, OSE 172, and OSE 276. Integrates medical office correspondence, reports, billing, appointments, medical records, medical-legal issues, and priority setting. Stresses job-task analysis and human relations. (45-0) W



**OSE 267 Legal Office Practices** 3 Sem Hrs  
Prerequisites: Sophomore standing, OSE 151 and 172 or consent of instructor. Integrates legal office concepts and skills; expands knowledge of terminology, definitions, spelling, and shorthand outlines with attention given to human relations. Offered only in odd-numbered years. (45-0) W

**OSE 268 Professional Office Procedures** 3 Sem Hrs  
Prerequisites: OSE 151 and OSE 245. Development of various office concepts and skills through the integration of specialized software packages. Also develops job-task analyses and human relations skills. Discusses current office topics such as business etiquette, prioritizing, and screening phone calls. (45-0) FW

**OSE 273 Keyboarding IV Advanced** 3 Sem Hrs  
Prerequisites: OSE 172 or OSE 188 completed with a minimum grade of C (2.0) or equivalent. Emphasizes excellence and refinement of vocational skills and office production jobs using a microcomputer. Provides practice in keyboarding communications used in different professional and business fields. Straight-copy speed required for a C (2.0) is 53-55 wpm. (45-0)

**OSE 274 Machine Transcription** 2 Sem Hrs  
Prerequisite: OSE 172 (with intermediate wordprocessing background) completed with a minimum grade of C (2.0) or equivalent. Marketable transcription skills will be developed through practice by incorporating proper vocabulary and spelling usage; word division; grammar; capitalization; punctuation; letter, memo, and document format; microcomputer and cassette transcription operation. Outside lab assignments required. (30-0) FW

**OSE 275 Machine Transcription/Legal** 2 Sem Hrs  
Prerequisite: OSE 172 (with intermediate wordprocessing background) completed with a minimum grade of C (2.0) or equivalent, GB 251, and GB 252. Develops marketable legal transcriptions skills through practice of proper legal vocabulary and spelling usage; word division; grammar, capitalization; punctuation; letter and legal document format; microcomputer and cassette transcription machine operation. (30-0) W in odd-numbered years.

**OSE 276 Machine Transcription/Medical** 3 Sem Hrs  
Prerequisite: OSE 172 with intermediate WordPerfect background completed with a minimum grade of C (2.0) or equivalent; BIO 101 and HSC 105 or equivalent. Introduces cassette transcription machine operation and microcomputer to record physicians' dictation of medical progress notes, operative reports, letters and miscellaneous medical documents. Incorporates extensive practice and application of medical terminology, spelling, grammar, punctuation, capitalization. Uses various medical form formats. (45-0) F

**OSE 290-299 Special Projects in Office Systems Education** O

## Physical Education Activity Courses ♦♦♦♦

**PE 101 Physical Fitness** 1 Sem Hr  
An individually designed program of physical fitness centered around the development of strength, flexibility and cardiovascular endurance. Pre and post test evaluations will be administered and an individual profile developed. (0-30) A

**PE 103 Physical Conditioning for Women** 1 Sem Hr  
An introduction to the basic concepts underlying physical conditioning as it relates to optimal healthful living through the use of exercise programs and related fitness activities. (0-30) A

**PE 104 Dance Aerobics** 1 Sem Hr  
Provides information and skills needed to assess and improve fitness through the use of aerobic dance, exercises to music, and analysis of personal nutrition habits. (0-30)

**PE 105 Circuit Training** 1 Sem Hr  
Designed to maintain and improve physical fitness levels. Weights, calisthenics and endurance exercises are used in different combinations to provide complete workouts in a limited amount of time. (0-30) FW

**PE 106 Fencing I** 1 Sem Hr  
An introduction to foil fencing, its basic fundamentals, techniques, rules and safety measures. (0-30) FW

**PE 107 Fencing II** 1 Sem Hr  
Prerequisite: PE 106 or permission of instructor. Designed to further refine the basic fundamentals and the opportunity to expand knowledge and improve skills. Advance strategies included are: compound attacks and compound returns, false attacks on preparation and counter attacks. (0-30) FW

**PE 108 Dance Exercise II** 1 Sem Hr  
Prerequisite PE 104 or permission of instructor. A continuation of Dance Exercise I. Promotes physical fitness through exercises and aerobic activities set to music and emphasis will be placed on creating one's own exercise routine and techniques to reduce stress and tension. (0-30) W

**PE 111 Basketball for Women** 1 Sem Hr  
Covers basic skills of passing, dribbling, shooting, and team play. Rules and strategy also included. (0-30) FW

**PE 112 Basketball for Men** 1 Sem Hr  
Covers basic skills of passing, dribbling, shooting and positional play. Rules and strategy are included. (0-30) FW

**PE 113 Exercise Walking** 1 Sem Hr  
A systematic study of the way to change everyday walking into an exercise form. Each participant will create their own exercise prescription for walking based on their lifestyle and specific fitness needs. (0-30) A

**PE 114 Soccer I** 1 Sem Hr  
Basic skills in kicking, dribbling, heading, and positional play. Rules and strategy are included. (0-30) F

**PE 115 Softball** 1 Sem Hr  
Covers throwing, catching, batting, and base running, along with the rules of play. (0-30) S

**PE 118 Volleyball I** 1 Sem Hr  
Basic skills of handling the ball, passing setting, spiking, net-rebound play, and blocking. Rules and strategy are included. (0-30) O

**PE 119 Volleyball II** 1 Sem Hr  
Prerequisite: PE 118 or permission of instructor. Continuing improvement of beginning skills and the addition of experience in advanced play. Advanced strategies including offensive play patterns (4-0, 6-0, and switching) and defensive play patterns (middle back and middle up). Use of current USVBA rules. (0-30) W

**PE 120 Racquetball I** 1 Sem Hr  
Introduces basic skills and rules necessary to participate in racquetball which is a competitive game played in a four-walled court by two, three, or four players using stringed racquets to serve and return the ball. (0-30)

**PE 121 Racquetball II** 1 Sem Hr  
Prerequisite: PE 120 or Instructor Permission. Emphasizes development of advanced skills, strategies, techniques, and court positioning. (0-30)

**PE 122 Badminton I** 1 Sem Hr  
Techniques and use of the various shots, along with rules and strategies. (0-30) A

**PE 124 Sports Judo—Women** 1 Sem Hr  
Introduction to the rules, skills, and courtesies in sports judo as well as the special conditioning required (0-30) FW

**PE 125 Sports Judo—Men** 1 Sem Hr  
Introduction to rules, skills and courtesies in sports judo as well as the special conditioning required. (0-30) FW

**PE 126 Intermediate Sports Judo** 1 Sem Hr  
Prerequisite: PE 125 or permission of instructor. Continuing improvement of beginning techniques, additional throwing, groundwork, and combination throwing techniques taught. (0-30) FW



**PE 127 Tennis I** **1 Sem Hr**  
An introduction to the basic strokes in tennis along with rules, strategies, and courtesies of the game. Special fees are charged when taught off campus in indoor tennis facilities. (0-30) A

**PE 128 Tennis II** **1 Sem Hr**  
Prerequisite: PE 127 or permission of instructor. Designed to further refine the skills (ground strokes, serving, volleying) and knowledge (rules, strategies, and techniques of participation) of the beginning tennis player. Special fees are charged when taught off campus in indoor facilities. (15-15) FW

**PE 129 Paddleball** **1 Sem Hr**  
Covers the fundamental skills needed to play paddleball. Shots, serves, rules, and strategies for both singles and doubles either racquetball or paddleball would be helpful. Students must provide paddle, balls, and eye protection. (0-30) FW

**PE 131 Bicycling** **1 Sem Hr**  
Emphasis is placed on the fundamentals of cycling. Will cover selection and maintenance of equipment, gearing, pedaling, the techniques of shifting. Inherent in this activity will be physical conditioning to successfully complete the course. Student must furnish own bicycle. (0-30) F

**PE 132 Archery** **1 Sem Hr**  
Introduction to the basic skills in shooting, both recurved and compound bows, in target and field archery. Students must furnish own arrows and finger protection. (0-30) A

**PE 133 Bowling I** **1 Sem Hr**  
Fundamentals of starting stance, approach, and delivery, with emphasis on spot aiming. Courtesies, rules and scoring are also covered. There is a lane fee for each class meeting at which you bowl. (0-30) A

**PE 134 Bowling II** **1 Sem Hr**  
Prerequisite: PE 133 or permission of instructor. Designed to further refine the skills (hook delivery, spot bowling, specific spare pin pickup, and adaptation to lane conditions) of the bowler. (0-30) FW

**PE 135 Golf I** **1 Sem Hr**  
Fundamentals in the use of woods, irons, and putter along with the rules and courtesies of the game. A fee is charged for off campus golf course use. (0-30) FS

**PE 136 Golf II** **1 Sem Hr**  
Prerequisite: PE 135 or permission of instructor. Emphasis will be directed to the acquisition of the finer skills of the game of golf. Major attention will be given to the areas of shot placement and control, club selection, rule interpretation. (15-15) FS

**PE 138 Step Aerobics** **1 Sem Hr**  
Incorporates bench stepping to enhance cardiorespiratory endurance and muscle tone using the aerobic principle. Emphasis on the importance of fitness and a healthy lifestyle is also applied. (0-30) A

**PE 139 Weight Training for Men** **1 Sem Hr**  
A systematic program of body conditioning and development through the use of weight exercises as the main emphasis. (0-30) A

**PE 140 Weight Training for Women** **1 Sem Hr**  
A systematic program of body conditioning and development through the use of weight exercises as the main emphasis. (0-30) A

**PE 141 Modern Dance I** **1 Sem Hr**  
For the beginner, an introduction to fundamentals of body movement through rhythmic activities designed to improve strength, flexibility, timing, spatial awareness and coordination. Also included will be problems in improvisation and simple choreography, and a brief survey of the history of modern dance and the contemporary dance scene. (0-30) FW

**PE 143 Ballroom Dancing** **1 Sem Hr**  
Introduces the basic steps and music of the Fox Trot, Waltz, Swing, Cha Cha, Rhumba, and Tango. (0-30)

**PE 145 Jazz Dance I** **1 Sem Hr**  
For the beginner, an introduction to basic jazz dance techniques (stretches, isolations, floor work, turn and locomotor patterns, etc.) and practice in combining them into dance phrases. There will be simple choreography problems and a survey of the history of jazz dance and of the contemporary jazz dance scene. (0-30) FW

**PE 150 Swimming for Nonswimmers** **1 Sem Hr**  
For those individuals who do not know how to swim and who have a fear of water. It will include personal safety skills, physical and mental adjustment to the water and fundamental swimming skills. (0-30) A

**PE 151 Swimming I** **1 Sem Hr**  
A "learn to swim" course for beginners. Fundamental swimming and safety skills are stressed. (0-30) A

**PE 152 Swimming II** **1 Sem Hr**  
Prerequisite: PE 151. Theory and practice of the five basic swimming strokes (front crawl, side stroke, elementary back stroke, and breast stroke). Water safety skills and knowledge are emphasized. (0-30) A

**PE 153 Swimming III—Conditioning** **1 Sem Hr**  
Prerequisite: PE 152. This course will acquaint the student with the basic principles of cardiovascular fitness and strength in order to increase these components of fitness through swimming. (0-30) A

**PE 154 Lifeguarding** **1 Sem Hr**  
Prerequisite: Skill and knowledge of the five basic strokes. The American Red Cross units and progressions will be followed. Successful completion of all the lifesaving and water safety requirements will result in certification. (0-30) FW

**PE 155 Scuba Diving I** **1 Sem Hr**  
Prerequisite: ability to swim. Techniques and information regarding use of self-contained underwater breathing apparatus including mask, fins, and snorkel. Includes classroom lecture, demonstration and pool dives. Students will be required to purchase a mask and snorkel plus pay an equipment fee as per guidelines given during first class session. (0-30) A

**PE 156 Canoeing I** **1 Sem Hr**  
Instruction in the basic paddling strokes and maneuvering techniques, methods of canoe transportation, launching, and boarding and canoe rescue. Involves on-campus classroom sessions and a weekend at a lake or river in Northern Michigan. Student must pay own expenses, canoe rental, food and transportation. (0-30) F

**PE 157 River Canoeing/Camping** **1 Sem Hr**  
Review of basic paddling techniques and instruction in advanced paddling techniques, plus care and repair of equipment. There will also be a review of first aid techniques, canoe transport launching and preparing for a two or three day river canoeing/camping experience. The student is expected to have basic swimming skills. The class involves on-campus classroom/pool sessions and on river canoeing and camping. Students must pay their own expenses, canoe rental, food and transportation. (0-30) F

**PE 158 Adapted Aquatics Aide** **1 Sem Hr**  
Swimming techniques, water exercises, simulation of disabilities, supervised practice teaching, and basic water safety involved with physical and mental impairments. (0-30) FW

**PE 159 Water Exercise** **1 Sem Hr**  
Introduces water exercises to develop and maintain good physical condition. Swimming skills not required. (0-30)

**PE 162 Scuba Diving II** **1 Sem Hr**  
Prerequisite: PE 155 or instructor's permission. Information, techniques, and practice in the use of self-contained underwater breathing apparatus for open water diving. Procedures covering dressing, equipment, buoyancy, kicks, descents, ascents, and the use of the compass are included. Course necessary for SCUBA certification. (0-30) AN

**PE 164 Cross Country Skiing** **1 Sem Hr**  
Emphasis is placed on fundamentals in cross country skiing. Students will be taught selection and care of equipment, rudimentary ski move-



ments, step turn, moving ahead over snow, controlling speed, half plow turn, poling, moving step and moving step turn, kick turn, skiing uphill, and waxing for various temperatures. Student must furnish own equipment and pay any special fees. (0-30) W

**PE 166 Backpacking I 1 Sem Hr**

To develop an understanding of and proficiency in the theory and techniques of backpacking. Primary emphasis will be directed to equipment selection, planning a camping trip, menu selection and outdoor cooking, safety, knot tying, and the sound use of conservation practices in the outdoors. These skills will be applied during an off campus weekend field trip normally. Students must pay own expenses. (0-30) FS

**PE 167 Flyfishing 1 Sem Hr**

Introduction to flycasting, knot tying, tack selection, wading safety, entomology, and ethics necessary for the enjoyment of flyfishing. Final session held on one of Northern Michigan's trout streams. Students must provide own waders and a valid Michigan fishing license. (0-30) WS

**PE 169 Lifestyle/Health-Risk 1 Sem Hr**

A comprehensive health risk assessment designed to educate and motivate individuals to make lifestyle modifications which will promote a longer and healthier life. (0-30) FW

**PE 170 Skiing I 1 Sem Hr**

Emphasis is placed on the fundamental skills. The student will be taught gliding wedge, wedge turn, traversing and stem turn. Student must furnish or rent equipment and pay skiing charges. (0-30) WE

**PE 171 Skiing II 1 Sem Hr**

Prerequisite: PE 170 or equivalent skill level. Student will begin the transition from steered turn to sliding turn. Side slipping, uphill christie and stem christie will be taught. Student must furnish or rent equipment and pay skiing charges. (0-30) WE

**PE 172 Skiing III 1 Sem Hr**

Prerequisite: PE 171 or equivalent skill level. Student will learn the finer points of parallel skiing. Parallel christie, parallel with check, and short swing will be taught. Student must furnish or rent equipment and pay skiing charges. (0-30) WE

**PE 176 Ballet I 1 Sem Hr**

An introduction to the basic movements of ballet coordinated with exercises for stretching, flexing, and toning. Also stresses postural alignment and correction, basic barre work, and beginning center adage and allegro movements. (0-30) FW

**PE 177 Ballet II 1 Sem Hr**

Prerequisite: PE 176 or instructor permission. Continues and further develops the basic movements introduced in Ballet I with emphasis on combinations of movements (enchainments) to develop concentration, balance and speed. (0-30) FW

**PE 180 Sailing 1 Sem Hr**

Basic theory, skill and techniques in small boat sailing, i.e., sailboat safety, nomenclature, knot tying, helmsmanship, sail handling, jibbing and coming about, docking under sail. A fee is charged for boat rental. (0-30) S

**PE 181 Tae Kwon Do I 1 Sem Hr**

Non-contact martial art class stressing proper technique and qualities of respect, self-discipline, and skills of self-defense. (0-30)

**PE 182 Tae Kwon Do II 1 Sem Hr**

Prerequisite: PE 181 or Instructor Permission. Intermediate non-contact martial art class stressing advanced techniques. Uniform required. (0-30)

**PE 187 Rowing 1 Sem Hr**

Prerequisite: Ability to swim. Explanation, demonstration, and practice in the basic techniques, equipment, and safety needed in rowing. Instruction and rowing will take place at the Rowing Club facilities in Bay City. Additional lab fee required. (0-30) S

**PE 189 Horseback Riding 1 Sem Hr**

Introduction to the sport of horseback riding and horsemanship. Emphasis on riding techniques, equipment, groundwork, care, and safety. (Travel to nearby stable and lab/stable fee required.) (0-30) A

**PE 191 Adapted Physical Education 1 Sem Hr O**

**PE 192 Adapted Physical Education 1 Sem Hr O**

**PE 193 Adapted Physical Education 1 Sem Hr O**

**PE 194 Adapted Physical Education 1 Sem Hr O**

A program of developmental activities, games and sports suited to the interest, capacities and limitations of students with disabilities who may not safely or successfully engage in unrestricted participation in the general physical education program. (0-30) W

**PE 201 Self-Defense/Fitness 2 Sem Hrs**

Prerequisite: Permission of instructor. Con-current enrollment in CJ 101, PEH 168, and OSE 153 for Basic Police Training Academy. Teaches methods of self-defense using pressure points and leverage for subject control. Emphasizes subduing dangerous or violent individuals for criminal justice purposes. Fitness module emphasizes regular program of calisthenics, stretching, strength building, and conditioning through aerobic and non-aerobic activities. Grade of "C" (2.0) or better in this course in order to complete Basic Police Training Academy. (0-60)

**PE 290-299 Special Projects in Physical Education activities O**

**Physical Education and Health  
Education Theory Courses ♦♦♦♦♦♦♦♦♦♦**

**PEH 159 Officiating Basketball 1 Sem Hr**

Covers the techniques and rules governing the officiating of basketball. Practical experience provided. (15-0) W

**PEH 165 Community First Aid 1 Sem Hr**

Introduction to basic first aid skills. Necessary as the primary link in the Emergency Medical Services system. Adult CPR certification may be received. (15-0) A

**PEH 168 Advanced First Aid and Emergency Care 3 Sem Hrs**

Prerequisite: Permission of instructor. CJ 101, PE 201, and OSE 153 must be taken concurrently for Basic Police Training Academy. Provides knowledge and practical skills necessary to assist victims of injury or sudden illness. Covers CPR, wounds, choking, poisoning, substance abuse, burns, exposure to heat and cold, emergency childbirth, fractures, stroke, convulsive disorders, diabetes, auto and pool extrication. Successful completion of course entitles student to American Red Cross CPR and Advanced First Aid Certifications. Grade of "C" (2.0) or better in this course in order to complete Basic Police Training Academy. (45-15)

**PEH 169 Cardiopulmonary Resuscitation 1 Sem Hr**

Development of cardiopulmonary resuscitation (CPR) knowledge and skills to a degree that an individual could meet the needs of most situations in which emergency first aid care of CPR is required. (15-0) A

**PEH 171 Health Education—Wellness 3 Sem Hrs**

Foundation health science course with special emphasis on personal well-being. Attention is given to mental health, substance abuse, family health, the disease process, nutrition education, consumer health, and total fitness. Credit may be earned in PEH 171 or SOC 246 but not in both. (45-0) O

**PEH 190 Equine Management 2 Sem Hrs**

Introductory course in the basic principles of horse care and management. Topics include selecting a horse, tack, breeds, nutrition, handling, equipment, grooming, care, safety, illnesses, first aid, showing, riding techniques, breeding and facility construction. Satisfies needs of prospective horse owners, the recreational rider or those interested in a career in equine science/management. Credit may be earned in PEH 190 or AGR 190 but not in both. Fee required. (30-0) F



## Coaching Basketball

2 Sem Hrs

## 3 Sem Hrs

## 3 Sem Hrs

### Recreation. ○

## Philosophy Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

## 3 Sem Hrs

W

**3 Sem Hrs**

## 3 Sem Hrs

## 3 Sem Hrs

Table 3.3

## 3 Sem Hrs

FW

## 4 Sem Hrs

**2 Sem Hrs**

## 1 Sem Hr

(18-0) FWS

## 3 Sem Hrs

or POL 240 but not in both. (45-0) O

## 3 Sem Hrs

theoretical entities. (45-0) O

## 3 Sem Hrs

Designed as a seminar for the advanced student. (45-0) FW

**PHL 290-299 Special Projects in Philosophy O**

## Photography Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

## 3 Sem Hrs

complete several group and individual photographic projects. (0-90) FW

## 3 Sem Hrs

30) FW

## 3 Sem Hrs

tage problems. Additional lab hours to be arranged. (45-30) FW

## 3 Sem Hrs

silkscreen. (45-30) O

## 3 Sem Hrs

Advanced Photography. (45-30), O



**PHO 202 Color Photography I****3 Sem Hrs**

Prerequisite: PHO 100 or PHO 101 or equivalent. Fundamental techniques of color negative films and printing materials, with a study of the history and aesthetic concerns of the media. Projects will focus on a variety of visual approaches. The documentary style, photo illustration, the commercial assignment and the artistic viewpoint. Additional laboratory time to be arranged beyond the scheduled lecture/laboratory. Formerly PHO 105 Color Photography. (45-30) O

**PHO 203 Color Photography II****3 Sem Hrs**

Prerequisite: PHO 100 or PHO 101 or portfolio review. Fundamental techniques of color positive and printing materials including: film types, exposures, filter and cibachrome processing, with a continued examination of historical and contemporary trends in color photography. (45-30) O

**PHO 290-299 Special Projects in Photography O****Physics Courses****PHY 100 Introduction to Astronomy****3 Sem Hrs**

Designed to familiarize the student with the origin, characteristics, and evolution of the solar system, the stars, the galaxies, and the universe. Emphasis will be placed on how our understanding of the physical universe has changed. (45-0) O

**PHY 101 Applied Physics****4 Sem Hrs**

Prerequisite: MTH 111. Recommended MTH 103 concurrently. An introduction to basic physical principles involving mechanics, fluids, and sound, with emphasis on practical applications. (60-30)

**PHY 111 General Physics I****4 Sem Hrs**

Prerequisites: Trigonometry or high school physics and MTH 119 or equivalent. Designed to familiarize the student with basic physical principles involving mechanics, heat, and sound. (60-45)

**PHY 112 General Physics II****4 Sem Hrs**

Prerequisite: PHY 111. Designed to familiarize the student with basic physical principles involving electricity, magnetism, light, and modern physics. (60-45)

**PHY 211 Physics I****5 Sem Hrs**

Prerequisites: MTH 161. High school physics recommended. Designed to familiarize science and engineering majors with basic physical principles involving mechanics, heat, and sound. (75-45)

**PHY 212 Physics II****5 Sem Hrs**

Prerequisites: PHY 211 and MTH 162. Designed to familiarize science and engineering majors with basic physical principles involving electricity, magnetism, light, and modern physics. (75-45)

**PHY 215 Engineering Mechanics, Statics****3 Sem Hrs**

Prerequisites: PHY 211 and MTH 162 (MTH 162 may be taken as a parallel course). Covers forces, components, vectors, moments, couples, methods of sections, stress in frame structures, cables, friction, first moments, products of inertia, and centroids. (45-0) O

**PHY 294 Physics and the Work Environment****4 Sem Hrs**

Designed to provide beginning science student with fundamental physics principles as they relate to mechanical aptitude and the workplace. Topics to be covered include spatial understanding, fundamentals of effective heat and pressure, actions of gears, pulleys, and chains, specific gravity and viscosity, and the process of distillation. Students will become familiar with the use of technical mathematics and the ways in which statics and equilibrium, gravitational and frictional forces, and mechanical properties of materials impact the work environment. Special emphasis will be placed on heat engines and heat pumps. (45-30) O

**PHY 290-299 Special Projects in Physics O****Political Science Courses****POL 103 Introduction to American Government****3 Sem Hrs**

Organizations and functions of the political, electoral, legislative, administrative, and judicial processes of federal, state, and local governments. Credit may be earned in POL 103 or POL 111 but not in both. (This course satisfies the American Government graduation requirement in all curricula.) (45-0) A

**POL 111 American Government and Politics****4 Sem Hrs**

A study of the American political system utilizing the techniques of political science. Particular emphasis is placed on the organization and functioning of the electoral, legislative, administrative, and judicial process of the national government. Comparisons are made between federal, state, and local governments. Recommended for pre-law or social science majors or minors. Credit may be earned in POL 111 or POL 103 but not in both. (This course satisfies the American Government graduation requirement in all curricula.) (60-0) FW

**POL 115 Politics of the Environment****2 Sem Hrs**

Designed to develop an understanding and appreciation of the interacting forces that comprise our environment. Emphasis will center on the modern ecological problems involved in human's relationship to the geographic area under study as it has been affected by history, economics, and ecological conditions. Using the Saginaw Valley, students will examine various aspects of the exploitation, conservation, and control of the Valley's environment. May also be taken as BIO 115. Credit may be earned in POL 115 or BIO 115 but not in both. (30-0) WD

**POL 212 State and Local Governments****3 Sem Hrs**

Prerequisite: A course in political science or permission of instructor. Development, structure, organization and problems of the state and local units of government; along with their relation to the federal government. (45-0) O

**POL 220 Minority Group Politics****3 Sem Hrs**

Prerequisite: A course in political science or permission of the instructor. An examination of the dynamics of minority group politics in the American political system. The nature, role, techniques, and objectives of ethnic groups will be analyzed, with special emphasis on the Afro-American and the Mexican-American. (45-0) FW

**POL 221 Comparative Government****3 Sem Hrs**

Prerequisite: A course in political science or permission of the instructor. The study of major European and selected non-western political systems. Emphasis is placed on the techniques of comparative analysis and concepts of modernization, political development, and political culture. (45-0) O

**POL 222 The Middle East: Government and Politics****3 Sem Hrs**

A study of the contemporary political systems of the countries of the Middle East with emphasis on the problems of developing nations, the internal conflicts within the region, and the role of the Middle East in the international community. (45-0) O

**POL 223 The Judicial Process****3 Sem Hrs**

Prerequisite: A course in political science or permission of the instructor. A study of state and federal court systems, including the selection of judges, the roles of trial, primary and secondary appellate courts in civil and criminal cases, lawyers and the organized bar, pressure groups, relations between state and federal courts, as well as the legislative and executive branches, access to courts, and judicial review. Emphasis will also be given to judicial policy making, including constitutional law and civil liberties. (45-0) O

**POL 225 International Relations****3 Sem Hrs**

Prerequisite: A course in political science or permission of the instructor. Introduction to the study of international politics. Covers the nation-state system, cold war politics, colonialism, and the problems of political stability. Also includes a survey of regional and international organizations. (45-0) O



**POL 227 American Political Parties** 3 Sem Hrs  
Prerequisite: A course in political science or permission of the instructor. History, structure, and functions of political parties in the United States; interaction of political parties, pressure groups, and public opinion. (45-0) O

**POL 228 Constitutional Issues** 3 Sem Hrs  
A study of contemporary constitutional controversies set against their historical background. Typical issues discussed include: death penalty; abortion; euthanasia; freedom of the press vs. national security; presidential and congressional control of foreign policy; the insanity plea; and affirmative action. (45-0) O

**POL 229 Political Terrorism** 3 Sem Hrs  
A study of state- and non-state sponsored terrorism: definition, origins, purposes, and nature of terrorism; tactics and weapons; objects and audiences; responses of objects and audiences: theory and case studies. (30-0) O

**POL 240 Social and Political Theory** 3 Sem Hrs  
Examines past and present political and social system from a theoretical perspective. Entails a comparison and evaluation of the major ideologies and rationales of political systems such as socialism, communism, fascism, anarchism, and liberalism. Credit may be earned in POL 240 or PHL 240 but not in both. (45-0) O

**POL 241 Contemporary Feminist Thought** 3 Sem Hrs  
Provides a theoretical introduction to feminist thought and relates feminist thought to American political thought and American society. (45-0) O

**POL 250 Introduction to British Government** 3 Sem Hrs  
Prerequisite: POL 103 or 111 or permission of instructor. An introduction to British political institutions and behavior. Both traditional perspectives and modern developments in British politics will be explored. (45-0) O

**POL 268 International Studies in Political Science** 4 Sem Hrs  
The student will elect to do either a survey study of the overall political system of a country other than the United States or an in-depth study of one or more aspects of that political system. Overseas study is an integral part of the course. Expenses for travel and overseas study must be borne by the student. (60-0) O

**POL 275 The Vietnam War** 3 Sem Hrs  
An interdisciplinary examination of the Vietnam War from its earliest beginnings as a colonial conflict to the withdrawal of American forces in 1975. The course seeks to integrate military, diplomatic and political factors in order to understand America's involvement. It also is an attempt to consider American decision-making in the broad context of the nation's global outlook and policies. Credit may be earned in POL 275 or HIS 275 but not in both. (45-0) O

**POL 290-299 Special Projects in Political Science** O

## Practical Nursing Education Courses ♦♦♦♦

**PNE 100 Role/Function of Nurse Assistant** 1 Sem Hr  
Prerequisite: PNE 101 concurrently. Focus on function and responsibilities of nurse assistant in relation to special needs of residents in long-term care facilities. Emphasis on legal and ethical aspects associated with role of nurse assistant. Prepares PN student who successfully completes PNE 101 to take competence evaluation tests (written and skills) leading to State certification as a Nursing Assistant. (15-0) F

**PNE 101 Fundamentals of Practical Nursing** 7 Sem Hrs  
Prerequisites: BIO 130 and NUR 100 with C minimum grade. Focus is on the nursing process as applied to basic human needs, introduction of concepts and theories related to holistic patient care and health education, including nutrition, mental health and legal aspects pertaining to practical nursing. Fundamental practical nursing skills will be practiced in selected clinical facilities. (Some evening experiences may be required.) (45-180) F

**PNE 102 PN Care of the Adult I** 8 Sem Hrs  
Prerequisites: PNE 101 and PNE 110 with C minimum grade. Focus is on common, well-defined nursing diagnosis through the application of the nursing process and scientific concepts. Includes practical nursing skills for the care of the adult, medical-surgical patient and practice in selected clinical facilities. (Some evening experiences may be required.) (75-135) W

**PNE 103 PN Maternal Child Care** 5 Sem Hrs  
Prerequisites: PNE 102 and BIO 132 with C minimum grade. With growth and development as a focal point, the continuum begins with an introduction to basic family-centered maternity care and proceeds through care of the pediatric patient, with common well-defined problems. Clinical experiences include observation and selected hands-on experiences in clinical facilities. (Some evening experiences may be required.) (60-45) S

**PNE 104 PN Care for the Adult II** 8 Sem Hrs  
Prerequisites: PNE 102 and BIO 132 with C minimum grade. A continuation of the concepts in PNE 102 and practical nursing skills for the care of the adult medical-surgical patient, includes clinical practice in a variety of health care agencies, as well as selected clinical facilities. (Some evening experiences may be required.) (75-135) S

**PNE 110 PN Principles of Pharmacology** 1 Sem Hr  
Prerequisite: BIO 130 and NUR 100 with C minimum grade. Focus is on selected pharmacologic agents employed in the treatment of patients across the life span. Included are the principles of medication administration in the clinical setting. (15-0) DF

**PNE 111 Role/Function Practical Nurse** 1 Sem Hr  
Prerequisites: NUR 101, 102, 103, 150 and NUR 105/106. Focus on functions and responsibility of the Practical Nurse in a variety of health care settings. Emphasis on scope of practice of the Practical Nurse as defined by the Michigan Nurse Practice Act. Prepares student who has completed specified clinical courses in the RN program to write the PN licensure exams. (15-0) O

## Physical Science Courses ♦♦♦♦♦ ♦♦♦♦♦

**PSC 101 Physical Science** 4 Sem Hrs  
Recommended for students not majoring in the sciences. Fundamental concepts of the physical sciences are investigated and used to explore selected topics of astronomy and energy. Emphasis is directed toward a deeper understanding of the relevance of science to modern society. (45-30)

**PSC 110 Energy in a Finite World** 3 Sem Hrs  
Designed to acquaint the student with basic energy concepts, the status and potential of current and future energy resources, the use and misuse of energy resources and technologies, and how to cope with decision making and problem solving as these concepts relate to energy. A number of mini-projects will be required which are designed to enhance the students' interest, understanding, and application of energy generation and utilization practices. (45-0) O

**PSC 290-299 Special Projects in Physical Science** O

## Psychology Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

**PSY 101 Applied Psychology** 3 Sem Hrs  
An introductory course in basic principles of human relations that may be used in business and industry. Emphasis on understanding motivation and behavior in practical situations; help in developing an appreciation of our own behavior so that students may work more successfully with supervisors and with peers. (45-0) A

**PSY 130 Psychology of Substance Abuse** 3 Sem Hrs  
A study of the predominant theories developed to explain the origins and the prevalence of substance abuse. Social deprivation, addictive personality, X-factor, need state, ignorance, peer pressure, personality defects and socialization theories will be examined. (45-0) EO



**PSY 211 General Psychology** **4 Sem Hrs**  
A study of the scientific principles underlying experience and behavior. Designed to give an understanding of human behavior in terms of the intrapsychic, behavioral, physiological, and environmental viewpoints. The course will cover basic research methods, learning, social factors, developmental changes, physiology, sensation, perception, motivation, intelligence, and personality. (60-0) A

**PSY 223 Child Psychology** **3 Sem Hrs**  
Prerequisite: PSY 211 or CD 114. Provides an in-depth understanding of the emotional, intellectual, social, and physical development in children from conception through adolescence. Considers the effect of heredity, environment, culture, and values on children's behavior, as well as, the effect children have on adults' behavior. A student must earn a grade of C (2.0) or better in this course to obtain a certificate or an Associate Degree of Applied Science-in Child Development. Credit may be earned in PSY 223 or CD 115 but not in both. (45-0)

**PSY 231 Theories of Personality** **3 Sem Hrs**  
Prerequisite: PSY 211. An examination of theories of personality development from a psychodynamic, social learning and humanistic perspective. Individual theories are critiqued regarding personality development, abnormality, psychotherapy, research, and the concept of humanity. (45-0) A

**PSY 235 Adult Development** **3 Sem Hrs**  
Prerequisite: PSY 211. Examines human behavior and adaptation in the adult years. Topics will include: Theories of adult development, psychological aspects of normal adulthood, and behavioral disorders due to aging. Emphasis will be placed on application of theoretical concepts and research findings. (45-0) O

**PSY 241 Abnormal Psychology** **3 Sem Hrs**  
Prerequisite: PSY 211. An examination of symptoms, and treatment of psychological disorders, including the psychodynamic, behavioral, humanistic, and neuroscience views of abnormal behavior. (45-0) A

**PSY 250 Behavior Management** **3 Sem Hrs**  
Designed to develop specific observation techniques and skills in the recording of behavior, in task analysis of behavior goals, and the development of reinforcement schedules for given situations. Examples of behavior modification will be discussed in terms of their application to behavior management. (30-30) O

**PSY 253 Mental Retardation** **3 Sem Hrs**  
An exploration of the history, etiology, and remediation of mental retardation. Emphasis will be on causes of mental retardation, physical and psychological characteristics of the mentally retarded, and approaches to remediation/development of the mentally retarded. (45-0) O

**PSY 290-299 Special Projects in Psychology** O

## Physical Therapist Assistant Courses ♦♦♦

**PTA 101 Clinical Anatomy** **2 Sem Hrs**  
Prerequisite: Admission to the Physical Therapist Assistant Program. Provides the gross anatomy concepts necessary to implement procedures utilized in physical therapy practice. (30-15) FD

**PTA 102 Clinical Neuroanatomy** **2 Sem Hrs**  
Prerequisite: PTA 101, 105 and 110 each with a C (2.0) minimum grade. Provides the neuroanatomy concepts necessary to implement procedures utilized in physical therapy practice. (30-0) WD

**PTA 105 Modalities I/Clinic I** **6 Sem Hrs**  
Prerequisite: Admission to the Physical Therapist Assistant program. Provides the theory, principles and technical skills of hydrotherapy, massage, ultrasound, diathermy, ultraviolet, infrared, traction, Jobst and paraffin modalities. (Includes twenty hours of assigned clinical observation.) (45-75) FD

**PTA 110 Therapeutic Exercise I** **3 Sem Hrs**  
Prerequisite: Admission to the PTA program. Introduces basic therapeutic exercise and activities of daily living (A.D.L.) (30-45) FD

**PTA 120 Therapeutic Exercise 2** **2 Sem Hrs**  
Prerequisites: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Introduces the general principles, rationale, and technical skills related to rehabilitation techniques for orthopedic, neurological, medical and pediatric disabilities. (15-45) WD

**PTA 121 Human Growth and Development** **2 Sem Hrs**  
Prerequisite: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Provides theory in and observation of normal and abnormal physical development from birth through aging. (15-15) WD

**PTA 123 Clinical Medicine 1** **3 Sem Hrs**  
Prerequisite: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Introduces acute and chronic pathological conditions resulting from disease or injury that are commonly treated in physical therapy. (30-30) WD

**PTA 124 PTA Clinic 2** **2 Sem Hrs**  
Prerequisite: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Structured clinical experience designed to provide the opportunity to observe and assist with physical therapy procedures. (0-96) WD

**PTA 125 Measurements Techniques** **2 Sem Hrs**  
Prerequisite: PTA 101, 105, and 110 each with a C (2.0) minimum grade. Provides the technical skills and knowledge necessary to assist a physical therapist with goniometry, muscle testing gait/posture evaluations, and sensory/coordination assessment. (15-45) WD

**PTA 205 Modalities II** **2 Sem Hrs**  
Prerequisite: PTA 102, 120, 121, 123, 124, 125 each with a C (2.0) minimum grade. Provides the theory, principles, and technical skills necessary to perform electrotherapy and other advanced modalities. (12-24) FD

**PTA 210 Therapeutic Exercise 3** **2 Sem Hrs**  
Prerequisite: PTA 205 and 213 each with a C (2.0) minimum grade. Provides the general concepts related to sensory motor, inhibition and facilitation techniques. (18-36) FD

**PTA 213 Clinical Medicine 2** **1 Sem Hr**  
Prerequisites: PTA 102, 120, 121, 123, 124, and 125 each with a C (2.0) minimum grade. An advanced study of specific orthopedic conditions treated in the physical therapy setting. (12-15) FD

**PTA 214 PTA Clinic 3** **3 Sem Hrs**  
Prerequisite: PTA 125 and 121 each with a C (2.0) minimum grade and permission of instructor. Structured clinical experience designed to provide the opportunity to observe and assist physical therapy procedures. (0-160) FD

**PTA 215 Rehabilitation Programs** **1 Sem Hr**  
Prerequisite: PTA 205 and 213 each with a C (2.0) minimum grade. Introduces the rehabilitation team concept and appropriate documentation skills Provides the rationale and techniques employed in the rehabilitation of persons with long-term disabilities. (13-15) FD

**PTA 220 Chest Physical Therapy** **1 Sem Hr**  
Prerequisite: PTA 214 with a C (2.0) minimum grade. Provides the theory, principles and skills used in chest physical therapy. Introduces basic cardiac rehabilitation. (15-0) WD

**PTA 221 Clinical Seminar** **2 Sem Hrs**  
Prerequisite: PTA 220 with a C (2.0) minimum grade. Provides the opportunity for students to discuss professional, ethical and legal issues related to clinical practice. (15-15) WD

**PTA 224 PTA Clinic 4** **9 Sem Hrs**  
Prerequisite: PTA 214 and 205 with a C (2.0) minimum grade and permission of instructor. Structured clinical experience designed to provide opportunity for integration and refinement of the knowledge and skills necessary for entry level employment. (0-480) WD

**PTA 290-299 Special Projects in Physical Therapy Assisting** O



## Quality Assurance Courses ♦♦♦♦♦♦♦♦♦♦

**QA 110 Quality Problem Solving Tools** 1 Sem Hrs  
Develops basic skills in the use of charts and graphs as tools used in solving problems in a Quality Management organization. Demonstrates twenty-six tools such as Pareto chart, flow charts, cause/effect diagrams, control charts, etc. (15-0)

**QA 120 Quality & Productivity Mgmt.** 2 Sem Hrs  
Personnel in management and supervisory positions will demonstrate the skills and insight needed to manage effectively in a quality-conscious work environment. This is done through the study of the philosophies of Deming, Juran, Crosby, Shainin, Taguchi, and with statistical problem solving techniques. (30-0) O

**QA 124 Quality Systems I** 3 Sem Hrs  
Prerequisite: QA 120 or permission of instructor. Personnel in management and supervisory positions will demonstrate the skills to effectively plan and implement a quality system and show its relationship to other functions in an organization. This is done through the study of the Quality Function and its applications applied to service, business and industry. (45-0) O

**QA 126 Quality Systems II** 3 Sem Hrs  
Prerequisite: QA 124. Continuation of QA 124. Personnel in management and supervisory positions will demonstrate the skills to interface their internal quality systems with external quality systems. Applications for service, business and industry will be emphasized. (45-0) O

**QA 130 Audit Preparation** 1 Sem Hrs  
Managers and supervisors explore how to prepare for non-financial audits. The focus is on the audit function, understanding requirements, and the documentation to meet those requirements. ISO-9000 and other assessment criteria will be defined and applications explored for service, business and industry.

**QA 131 Quality Auditing** 2 Sem Hrs  
Prerequisite: QA 124. Managers and supervisors explore both the preparation for and performance of non-financial audits. The focus is on selecting an audit team, planning, conducting, and summarizing the audit data and issuing a written report on the audit results. The auditing functions, both internal and external, will be defined and applications explored for service, business and industry. (30-0) O

**QA 191 Quality Teamwork** 1 Sem Hr  
Designes to build the students ability to respond to the needs of groups as a team member and a team leader. Studies team structures, roles of team members, and tools used in facilitating teams that contribute to organizational quality. Opportunities to model effective team operations will be provided. Credit may be earned in either QA 191 or GB 191 but not in both. (15-0) O

**QA 244 Statistical Process Control I** 3 Sem Hrs  
Prerequisite: QA 241, MFG 111, and MT 110 or equivalent; or MFG 231. Develops skill in the use of control charts in the manufacturing process. Students select proper control for the process, construct the control chart form production data, and analyze it for statistical stability. Includes both attribute and variable data control charts. (45-0) WE

**QA 246 Taguchi Techniques I** 1 Sem Hr  
Prerequisites: MTH 231 or QA 244. An overview of the Taguchi method of experimental design. Reviews the three major phases: system design; parameter design; and tolerance design; and covers the Loss Function and Signal-to-Noise Ratio. (15-0) O

**QA 247 Taguchi Techniques II** 3 Sem Hrs  
Prerequisites: MTH 233 or QA 244. An in-depth study of the Taguchi technique of experimental design. Topics include: loss function; parameter design for minimum, nominal, and maximum targets; tolerance design under noise conditions. A Taguchi design of experiment project is required. (45-0) O

## Radiography Courses ♦♦♦♦♦♦♦♦♦♦

**RAD 100 X-Radiation Physics** 4 Sem Hrs  
Prerequisite: Admission to Radiography Program. Designed to familiarize the student with the basic principles of electronics for X-radiation production and control in diagnostic radiographic equipment. (45-30) FD

**RAD 102 Introduction to Radiography** 2 Sem Hrs  
Prerequisites: Admission to Radiography Program plus concurrent enrollment in RAD 100 and 105. Provides an overview of Radiography and its role in health care delivery. The ethical and legal responsibilities of the Radiographer and methods of patient care will be included. (30-0) FD

**RAD 105 Fundamentals of Radiography** 2 Sem Hrs  
Prerequisite: Admission to Radiography Program. Provides the student with the theory and skills necessary to operate the radiographic equipment, process radiographs and use radiographic accessory devices in the campus laboratory setting. (15-22.5) FD

**RAD 110 Principles of Radiographic Exposure** 1 Sem Hr  
Prerequisites: RAD 105 and RAD 102 each with a minimum grade of C (2.0). Provides the theory and skills necessary to analyze the diagnostic quality of a radiograph and effectively manipulate exposure variables to produce a diagnostic radiograph. (7.5-21) FD

**RAD 115 Clinical Orientation** 3 Sem Hrs  
Prerequisites: Completion of RAD 105 and 102 each with a minimum grade of C (2.0) plus concurrent enrollment in RAD 110. Introduces the student to the clinical setting and provides the framework necessary to accomplish the purposes and objectives of clinical education. (0-112) FD

**RAD 120 Principles of Radiation Biology and Protection** 2 Sem Hrs  
Prerequisite: RAD 100, RAD 110, and RAD 115 each with a minimum grade of C (2.0) plus concurrent enrollment in RAD 130. Examines biological effects of radiation on cells, organs, and systems. Emphasis is placed on standards and methods of practice and includes radiation exposure standards and radiation monitoring. (30-0) WD

**RAD 130 Radiographic Procedures 1** 2 Sem Hrs  
Prerequisites: RAD 100, 110, and 115 each with a C (2.0) minimum grade. Introduces the basic terminology of radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the chest, upper extremities, and lower extremities. (15-22.5) WD

**RAD 135 Clinical Education 1** 6 Sem Hrs  
Prerequisites: RAD 120 and RAD 130 each with a C (2.0) minimum grade and concurrent enrollment in RAD 140. Provides structured clinical experience necessary to perform radiographic procedures of the chest, upper extremities, and lower extremities. Weekend and evening assignments may be required. (0-285) WD

**RAD 140 Clinical Seminar 1** 1 Sem Hr  
Prerequisites: RAD 120 and RAD 130 each with a C (2.0) minimum grade and concurrent enrollment in RAD 135. A clinical overview of radiographic procedures of the chest, upper extremities and lower extremities. Provides the opportunity to correlate all aspects of a radiographic procedure. (15-0) WD

**RAD 150 Radiographic Procedures 2** 2 Sem Hrs  
Prerequisites: RAD 135 and RAD 140 each with a C (2.0) minimum grade. A continuation of radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the abdomen, gastrointestinal tract, biliary tract, and urinary tract. (15-22.5) SD

**RAD 155 Radiographic Quality Assurance** 1 Sem Hr  
Prerequisites: RAD 135 and RAD 140 each with a C (2.0) minimum grade plus concurrent enrollment in RAD 150. Introduces the principles procedures, instrumentation, and testing methods used for quality control of the radiographic imaging system. (15-0) SD



**RAD 160 Clinical Education 2** **6 Sem Hrs**  
Prerequisites: RAD 150 and RAD 155 each with a C (2.0) minimum grade and concurrent enrollment in RAD 165. Provides structured clinical experience designed necessary to perform radiographic procedures of the abdomen, gastrointestinal tract, biliary tract, and urinary tract. Weekend and evening assignments may be required. (0-285) SD

**RAD 165 Clinical Seminar 2** **1 Sem Hr**  
Prerequisites: RAD 150 and RAD 155 each with a C (2.0) minimum grade and concurrent enrollment in RAD 160. A clinical overview of radiographic procedures of the abdomen, gastrointestinal tract, biliary tract, and urinary tract. Provides the opportunity to correlate all aspects of a radiographic procedure. (15-0) SD

**RAD 210 Pathology in Radiography** **2 Sem Hrs**  
Prerequisites: RAD 160 and 165 each with a C (2.0) minimum grade. The course will overview the pathological processes that occur as a consequence of aging, disease, heredity, or trauma. The effects of pathology on the radiographic image will be correlated with the techniques used to best manifest the pathological condition. Adjustments in the radiographic procedures or technical factors because of pathology will be stressed. (30-0) FD

**RAD 215 Radiographic Procedures 3** **2 Sem Hrs**  
Prerequisites: RAD 160 and 165 each with a C (2.0) minimum grade. A continuation of radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the shoulder girdle, bony thorax, cervical spine, thoracic spine, lumbar spine, pelvis, and hips. (15-22.5) FD

**RAD 220 Clinical Education 3** **7 Sem Hrs**  
Prerequisites: RAD 210 and 215 each with a C (2.0) minimum grade and concurrent enrollment in RAD 225. Provides structured clinical experience necessary to perform radiographic procedures of the shoulder girdle, bony thorax, cervical spine, thoracic spine, lumbar spine, pelvis, and hips. Weekend and evening assignments may be required. (0-395) FD

**RAD 225 Clinical Seminar 3** **1 Sem Hr**  
Prerequisites: RAD 210 and 215 each with a C (2.0) minimum grade and concurrent enrollment in RAD 220. Provides a clinical overview of radiographic procedures of the shoulder girdle, bony thorax, cervical spine, thoracic spine, lumbar spine, pelvis, and hips. Provides the opportunity to correlate all aspects of a radiographic procedure. (15-0) FD

**RAD 235 Radiographic Procedures 4** **2 Sem Hrs**  
Prerequisites: RAD 220 and 225 each with a C (2.0) minimum grade. A continuation of radiographic positioning. Provides the knowledge and skill necessary to perform radiographic procedures of the skull and facial cranium. (15-22.5) WD

**RAD 240 Special Procedures** **3 Sem Hrs**  
Prerequisites: RAD 220 and 225 each with a C (2.0) minimum grade. Introduces the more sophisticated and technically involved imaging procedures used in diagnostic radiology. Provides a basis for understanding the role of the radiographer in the area of special procedures. (45-0) WD

**RAD 245 Clinical Education 4** **7 Sem Hrs**  
Prerequisites: RAD 235 and 240 each with a C (2.0) minimum grade and concurrent enrollment in RAD 250. Provides structured clinical experience necessary to perform radiographic procedures of the skull and facial cranium. Weekend and evening assignments may be required. (0-395) WD

**RAD 250 Clinical Seminar 4** **1 Sem Hr**  
Prerequisites: RAD 235 and 240 each with a C (2.0) minimum grade and concurrent enrollment in RAD 245. A clinical overview of radiographic procedures of the skull and facial cranium. Provides the opportunity to correlate all aspects of a radiographic procedure. (15-0) WD

**RAD 260 Clinical Education 5** **6 Sem Hrs**  
Prerequisites: RAD 245 and 250 each with a C (2.0) minimum grade. Provides structured clinical experience to perform advanced radiographic procedures. Optional rotations through specialty areas may be provided. Weekend and evening assignments may be required. (0-285) SD

**RAD 290-299 Special Projects in Radiography** **0**

## Residential Construction Courses ♦♦♦♦♦

**RC 101 Construction Print Interpretation** **3 Sem Hrs**  
Instruction in this course includes trade terminology and description of the various views of working drawings, pictorial drawings, and the basic procedures in development of these drawings. Also included is the interpretation of specifications and job information as they pertain to construction and layout. Credit may be earned in either RC 101 or SKCT 111 but not both. (45-0) FD WE

**RC 102 Building Materials** **3 Sem Hrs**  
A study of the basic building materials used primarily for residential construction. Credit may be earned in RC 102 or ARC 101 but not in both. (45-0) FD WE

**RC 104 Construction Lab I** **3 Sem Hrs**  
A study of the care and use of woodworking tools. Included is: tool terminology, purpose and uses of various tools and the functional principles of woodworking hand tools, including those which are power or pneumatically driven. (15-60) FD WE

**RC 105 Building Site Surveying** **3 Sem Hrs**  
Prerequisite: RC 113. An introduction to the tools and instruments used for surveying. Methods and procedures of developing a building layout are included. Credit may be earned in RC 105 or ARC 221 but not in both. (45-0) WD

**RC 106 Concrete and Foundations** **4 Sem Hrs**  
Prerequisite: RC 102. Studies practical methods and procedures of preparing and setting concrete forms for such areas as basement floors, garage floors, driveways, sidewalks, patios, etc. (45-30) WD

**RC 108 Construction Safety** **2 Sem Hrs**  
A study of Occupational Safety and Health Administration (OSHA) safety and health standards required of residential builders. Includes training in first aid and cardio pulmonary resuscitation (CPR) to treat on-the-job injuries. Includes proper construction of safe scaffolding. (30-0) WD

**RC 109 Residential Drafting** **4 Sem Hrs**  
Fundamentals of residential drafting including linework, lettering, symbols, multiview projections, one and two point perspective, floor plans, sections and elevations. Study of space requirements. Introduction to CAD. Credit may be earned in RC 109 or ARC 105 but not in both. (45-45) FD

**RC 113 Carpentry Math** **2 Sem Hrs**  
Prerequisite: Students scoring 19 or higher on the numerical skills portion of ASSET can waive this course. Acquaints students with basic mathematical processes relating to construction and includes practical demonstrations. Covers fractions, decimals, ratios and percentages. Credit may be earned in either RC 113 or SKCT 113 but not both. (30-0) FD WE

**RC 114 Framing Square** **3 Sem Hrs**  
Prerequisite: RC 113 or a score of 19 or higher on the numerical skills portion of ASSET. The use of the framing square in construction. Credit may be earned in either RC 114 or SKCT 114 but not both. (45-0) FD WE

**RC 200 Construction Contracting Rules and Regulations** **3 Sem Hrs**  
Introduction to contracting laws, rules, and regulations as they apply to residential builders. Covers builder's law, builder's license, insurance, deeds and abstracts, loans and land development. (45-0) FD

**RC 201 Rough and Outside Framing** **4 Sem Hrs**  
Prerequisite: RC 104. Instruction in the techniques of construction used in all phases of framing and exterior finishing. (30-60) FD

**RC 202 Building Materials Estimation** **3 Sem Hrs**  
Prerequisite: RC 113. A course designed to introduce methods and procedures commonly used in determining the costs of construction materials. Credit may be earned in RC 202 or ARC 204 but not in both. (45-0) FD



**RC 203 Construction Laboratory II** **2 Sem Hrs**  
Prerequisites: RC 104 and 114. A course designed to allow time for practical application of the various construction procedures that are typically encountered on the job. Problem solving is a feature of this course. (15-60) FD

**RC 204 Inside Finishing and Hardware** **3 Sem Hrs**  
Prerequisites: RC 104 and 114. Instruction includes principles of interior construction, joinery and installation, and finishing of all types of interior trim. (45-30) WD

**RC 205 Cabinet Making and Millwork** **5 Sem Hrs**  
Prerequisite: RC 203. A study of the construction, placement, and installation procedures of cabinets used in residential buildings. (45-60) WD

**RC 206 Plumbing, Heating, and Electrical Equipment** **3 Sem Hrs**  
Designed to study equipment installation as it pertains to construction and carpentry. Credit may be earned in RC 206 or ARC 111 but not in both. (45-0) WD

**RC 211 Elements of Structural Design** **3 Sem Hrs**  
Review of basic mechanics. Analysis of live and dead loads on simple structural members. Use and limitations of wood, steel and concrete handbooks in structural design. Use of structural calculations with micro-computers and calculators in solving basic structural problems. Credit may be earned in RC 211 or ARC 211 but not in both. (45-0) WD

**RC 212 Building Systems Components** **3 Sem Hrs**  
Provides a comprehensive overview of the various types of construction design and structural capabilities. Covers framing techniques and the application of relevant materials. Design and application of different types of interior and exterior materials are stressed. (45-15) O

**RC 290-299 Special Projects in Residential Construction** O

## Real Estate Courses ♦♦♦♦♦♦♦♦♦♦

**RE 150 Real Estate Fundamentals** **3 Sem Hrs**  
Designed to acquaint the student with the principles of real estate including fundamentals, legal concepts, real estate licensing, brokerage, financing, and appraising. Upon presentation of a Real Estate Sales License to the chairperson of the business division of Delta College, Delta College will grant 3 hours of credit for RE 150 for prior learning experience. (45-0) O

**RE 280 Real Estate Principles** **8 Sem Hrs**  
Includes all materials from the Michigan Association of Realtors Realtor Institute GRI I, GRI II, and GRI III. In order to declare this curriculum and to receive the Real Estate Associate Degree, students must successfully complete the GRI courses through the Michigan Association of Realtors. Upon presentation of a copy of the GRI certificate to the chairperson of the business division of Delta College, Delta College will grant 8 hours of credit in RE 280 for prior learning experience. (180-0)

**RE 284 Real Estate Valuation** **3 Sem Hrs**  
Intended to serve the educational requirement of the State of Michigan Real Estate Valuation Specialist. Upon presentation of a copy of a certificate of completion for the Real Estate Valuation Specialist License (from the State of Michigan) to the chairperson of the business division of Delta College, Delta College will award 3 credits for RE 284 for prior learning experience. (45-0)

**RE 285 Real Estate Appraiser** **2 Sem Hrs**  
Prerequisite: RE 284. Intended to serve as the remaining part of the educational requirement for a State Licensed Real Estate Appraiser. Upon presentation of a copy of a certificate of completion for a State Licensed Real Estate Appraiser (from the State of Michigan) to the chairperson of the business division of Delta College, Delta College will award 2 credits for RE 285 for prior learning experience.

## Refrigeration, Heating & Air Conditioning Courses ♦♦♦♦♦♦♦♦♦♦

**RHA 121 Fundamentals of Refrigeration & A/C** **3 Sem Hrs**  
Introduces the mechanical refrigeration cycle as it applies to residential

and light commercial refrigeration and air conditioning equipment. Focuses on the functions of individual components, and develops basic skills in using various tools and related equipment. Credit may be earned in either RHA 121 or SKPT 121, but not both. (35-10)

**RHA 122 Refrigeration & A/C Service I** **3 Sem Hrs**  
Prerequisites: RHA 121, SKEL 106, and MTH 107. Covers common types of domestic refrigerators, dehumidifiers and portable air-conditioners with particular attention to principles of construction and operation of complete refrigeration systems. Through classroom demonstrations and lab experiments, students understand theory and principles underlying repairing and practical shop work. Credit may be earned in either RHA 122 or SKPT 122, but not both. (35-10)

**RHA 123 Commercial Refrigeration I** **3 Sem Hrs**  
Prerequisite: RHA 122. Develops understanding and basic skills in the servicing of commercial units such as walk-ins, reach-ins, display cases and commercial ice makers. Emphasises refrigeration system components and piping practices. Credit may be earned in either RHA 123 or SKPT 123, but not both. (35-10)

**RHA 124 Refrigeration & A/C Service II** **3 Sem Hrs**  
Prerequisite: RHA 122. Develops understanding and operational skills in trouble shooting domestic refrigeration and air conditioning systems. Focuses on the electrical components and system parts in frost-free, conventional and cyclematic units, and portable air conditioning units. Credit may be earned in either RHA 124 or SKPT 124, but not both. (35-10)

**RHA 125 Commercial Refrigeration II** **3 Sem Hrs**  
Prerequisite: RHA 123. Builds operational skills in servicing of commercial units such as walk-ins, reach-ins, display cases and commercial ice makers. Emphasises electricity and electrical components and trouble-shooting. Credit may be earned in either RHA 125 or SKPT 125, but not both. (35-10)

**RHA 135 Heating System Fundamentals** **3 Sem Hrs**  
Introduces various heating systems. Through lecture and demonstration, students understand the principles of heating systems and duct design. Reviews indoor air quality enhancements. (45-0)

**RHA 136 Heating Service Fundamentals** **3 Sem Hrs**  
Prerequisite: RHA 135. Introduces service on gas, fuel oil, and electric heating apparatus. Focuses on system mechanics and electrical circuits. Students gain basic skills on proper service procedures and safety. (35-10)

## Robotics Technology Courses ♦♦♦♦♦♦♦♦

**ROB 101 Introduction to Robotics** **1 Sem Hr**  
Surveys the global applications of robotics in the fields of manufacturing, medicine, agriculture, industrial security, waste cleanup, consumerism, military, and aerospace. Overview of robot types, programming, end effectors, and interface with the environment. Several robots are demonstrated in the lab. (15-0) O

**ROB 103 Robotic Power, Sensors and Controls** **3 Sem Hrs**  
Prerequisite: MTH 111 and PHY 101. Structure, mechanics, and control of the robot arm and end effector. Topics include robot forces, displacement and motion, mechanical drives and components fluid power, electromechanical sensors, and computer-interface controls. (45-0) O

**ROB 290-299 Special Projects in Robotics Technology** O

## Respiratory Care Courses ♦♦♦♦♦♦♦♦♦♦

**RT 100 Basic Sciences for Respiratory Care** **2 Sem Hrs**  
Prerequisite: High school algebra or MTH 107 with C (2.0) minimum grade within the past five years. Introduces the basic principles of math, chemistry, and physics utilized in the field of respiratory care. Emphasis is placed on the physical and chemical principles relating to liquids and gases as they provide a foundation for the study of respiratory care. (30-0).



**RT 111 Oxygen, Aerosol and Humidity Therapy 2 Sem Hrs**  
Prerequisite: Admission to Respiratory Care program. The basic respiratory therapy modalities of oxygen, aerosol, and humidity therapy are covered. Included are the indications, physiologic basis, and equipment utilized. Therapy is related to the adult and pediatric patient, including a discussion of some specific disease states. (26-8) FD

**RT 112 Medical Gas Production, Use and Regulation 1 Sem Hr**  
Prerequisite: Admission to Respiratory Care program. The production, use, storage, and regulation of medical gases are covered, including the regulatory agencies which set standards for safety. (13-4) FD

**RT 113 Evaluation of the Chest and Breathing; Coughing and Sputum; Chest Physical Therapy 1 Sem Hr**  
Prerequisite: Admission to Respiratory Care program. In this module the student will learn how to evaluate the chest and breathing; teach coughing and evaluate coughing and sputum production; and administer chest physical therapy. Cystic fibrosis a disease state requiring mucokinesis is also covered. (13-4) FD

**RT 114 Sterilization and Asepsis and Basic RC Pharmacology 1 Sem Hr**  
Prerequisite: Admission to Respiratory Care program. This module familiarizes the student with basic drug therapy as it relates to respiratory care, and includes croup, epiglottitis, and asthma as indications for drug therapy. Sterilization and asepsis as they relate to respiratory therapy equipment and procedures, the common respiratory pathogens, and the types of pneumonias are also included. (13-4) FD

**RT 115 Hyperinflation Therapy and Pressure-Cycled Ventilators 2 Sem Hrs**  
Prerequisite: Admission to Respiratory Care program. This course deals with the indications for and means of administration of deep breath therapy. Atelectasis as an indication is included. (26-8) FD

**RT 116 Chest X-ray, Basic Blood Gas Interpretation, & Bronchoscopy 1 Sem Hr**  
Prerequisite: Admission to the Respiratory Care program. Presents the basic diagnostic tools; chest X-rays and blood gas interpretation. In addition, bronchoscopy will be covered. (14-2) FD

**RT 121 Orientation to RC as a Profession 1 Sem Hr**  
Prerequisite: Admission to Respiratory Care program. Does not exclude students from orientation to facilities with which she/he has no experience. This course will familiarize the student with the role of a professional respiratory therapy from a historical, professional, and management perspective and the clinical settings in which the student will practice. (0-24) FD

**RT 126 Clinical Education I 4 Sem Hrs**  
Must be taken concurrently with RT 111, 112, 113, 114, 115, 116, and 121. In the clinical setting, the student will practice and apply the information and skills covered in the above listed courses. (0-160) FD

**RT 129 Clinical Seminar I 1 Sem Hr**  
Must be taken concurrently with RT 111, 112, 113, 114, 115, 116, 121, and 126. Designed to integrate the classroom and clinical activities in a seminar format. (15-0) FD

**RT 131 Artificial Airway care and Manual Ventilation 2 Sem Hrs**  
Prerequisites: RT 111, 112, 113, 114, 115, and 116 each with a C (2.0) minimum grade. The student will study various types of artificial airways, care of the patient with an artificial airway, suctioning secretions from airways, manual ventilation, and extubation. (26-8) WD

**RT 132 Adult Ventilator Care 3 Sem Hrs**  
Prerequisites: RT 111, 112, 113, 114, 115, and 116 each with a C (2.0) minimum grade. The student will study several adult ventilators, the types of mechanical ventilatory care, the indications for mechanical ventilatory support, and care of the patient receiving mechanical ventilatory support. (39-12) WD

**RT 133 Pulmonary Function and Stress Testing I 2 Sem Hrs**  
Prerequisite: A minimum of a C (2.0) grade in RT 111, 112, 113, 114,

115, and 116. The screening modes of pulmonary function testing will be presented. (28-4) WD

**RT 134 Arterial Blood Gases and Chest Tube Drainage 1 Sem Hr**  
Prerequisite: A minimum of a C (2.0) grade in RT 111, 112, 113, 114, 115 and 116. Focus on arterial blood sampling techniques and modifications in therapy to adjust blood gases. Includes principles and techniques of chest tube drainage. (14-2) WD

**RT 146 Clinical Education II 7 Sem Hrs**  
Must be taken concurrently with RT 131, 132, 133, 134, and 149. In the clinical setting, all clinical skills from RT 126 will be reviewed and applied to the critically ill patient. In addition, the concepts and skills of artificial airway care and manual ventilation, arterial blood gas analysis and chest tube drainage, and pulmonary function testing will be introduced and applied. (0-240) WD

**RT 149 Clinical Seminar II 1 Sem Hr**  
Must be taken concurrently with RT 146. Designed to integrate the classroom and clinical activities in a seminar format. (15-0) WD

**RT 160 Transition-Technician to Therapist 2 Sem Hrs**  
Completion of an AMA-approved Respiratory Therapy Technician Program within the last 2 years or completion of a Technician program with at least one year of work experience in the last 2 years; or certification (CRTT) by the National Board of Respiratory Care with at least 3 years of work experience in the last 5 years. Must be taken concurrently with RT 235. Emphasis will be upon material in RT 116, 133, and 134. Successful completion of this course and RT 235 will enable technicians to enter the second year of the therapist program. Will only be offered if space in the program permits. (30-0) SD

**RT 205 Respiratory Therapy Pharmacology 3 Sem Hrs**  
Prerequisite: A minimum of a C (2.0) grade in RT 207, 211, 212, 214, and 216. Covers advanced pharmacology, its physiological basis, and role in cardiorespiratory care. (45-0) WD

**RT 207 Cardiopulmonary Pathophysiology 2 Sem Hrs**  
Prerequisites: RT 235 with a C (2.0) minimum grade or RT 160 and RT 235 each with a C (2.0) minimum grade. Cardiopulmonary pathophysiology will be studied with an emphasis on clinical presentation, evaluation, and treatment. (30-0) FD

**RT 211 Advanced Respiratory Physiology 3 Sem Hrs**  
Prerequisites: RT 235 with a C (2.0) minimum grade or RT 160 and RT 235 each with a C (2.0) minimum grade for the Transition student. Pulmonary and cardiovascular physiology will be studied in detail, from the post natal period through aging, as the basis for evaluation and treatment of pathophysiology. (45-0) FD

**RT 212 Advanced Critical Care Techniques 2 Sem Hrs**  
Prerequisites: RT 235 with a C (2.0) minimum grade or RT 160 and RT 235 each with a C (2.0) minimum grade for the transition student. Patient management via mechanical ventilatory support, patient/ventilator compatibility, weaning, the effect of mechanical ventilation on other organ systems, as well as newer modes of mechanical ventilation will be covered. (26-8) FD

**RT 214 Seminar I 1 Sem Hr**  
Prerequisites: RT 235 with a C (2.0) minimum grade or RT 160 and RT 235 each with a C (2.0) minimum grade for the transition student. Introduces research methods and report writing in respiratory therapy. Requires the student to research and report upon an area of interest. (15-0) FD

**RT 216 Rehabilitation and Home Care I 1 Sem Hr**  
Prerequisites: RT 235 with a C (2.0) minimum grade or RT 160 and RT 235 each with a C (2.0) minimum grade for the transition student. Relates the scope of rehabilitation and home care to respiratory therapy. (15-0) FD

**RT 226 Clinical Education III 7 Sem Hrs**  
Must be taken concurrently with RT 207, 211, 212, 214, 216 and 229. A clinical rotation designed to provide a review of basic critical care skills. In addition, the knowledge and skills of advanced respiratory physiology,







## Surgical First Assistant Courses ♦♦♦♦♦

**SFA 301 Advanced Surgical Anatomy I** 3 Sem Hrs  
Prerequisites: Admission to the Surgical First Assistant advanced course of study and concurrent enrollment in SFA 303 and 305. Regional study of anatomy related to surgical procedures; also includes review of relevant physiology and introduction to basic embryology, histology, and pathology. (45-0) W

**SFA 303 Fundamental Techniques I** 3 Sem Hrs  
Prerequisites: Admission to the Surgical First Assistant advanced course of study and concurrent enrollment in SFA 301 and 305. Theory of and basic skills practice in pre-operative, intra-operative and post-operative functions and techniques of a Surgical First Assistant. (30-30) W

**SFA 305 Anesthesia and Surgical Pharmacology** 2 Sem Hrs  
Prerequisites: Admission to the Surgical First Assistant advanced course of study and concurrent enrollment in SFA 301 and 303. Review of anesthetic agents and their methods of administration, drugs used during surgery, and emergency drugs, including adverse reactions; emphasis is on how the surgical procedure may be affected by the pharmacologic agents used. (30-0) W

**SFA 312 Advanced Surgical Anatomy II** 3 Sem Hrs  
Prerequisites: SFA 301 with a minimum C (2.0) grade and concurrent enrollment in SFA 314, 316, and 318. Continuation of SFA 301, Advanced Surgical Anatomy I. (45-0) S

**SFA 314 Fundamental Techniques II** 2 Sem Hrs  
Prerequisites: SFA 303 with a minimum C (2.0) grade and concurrent enrollment in SFA 312, 316, and 318. Continuation of SFA 303, Fundamental Techniques I. (30-0) S

**SFA 316 Professional Conduct** 1 Sem Hr  
Prerequisites: SFA 301, 303, and 305 with a minimum C (2.0) grade and concurrent enrollment in SFA 312, 314, and 318. Exploration of interpersonal, legal and ethical aspects of surgical patient care, recognition of surgical complications, and appropriate actions. (15-0) S

**SFA 318 Applied Bioscience** 3 Sem Hrs  
Prerequisites: SFA 301, 303, and 305 with a minimum C (2.0) grade and concurrent enrollment in SFA 312, 314, and 316. Examination of normal and pathological physiological processes as applied to measurement and intervention techniques in surgical patients; review of surgical microbiology and infection control. (45-0) SN

**SFA 329 Clinical Preceptorship** 10 Sem Hrs  
Prerequisites: SFA 301, 303, 305, 312, 314, 316, and 318 each with a minimum grade of C (2.0) and consent of clinical coordinator. Clinical practice of basic surgical skills and techniques for Surgical First Assistants by individual assignment to a qualified preceptor surgeon who will provide direct supervision during each of six rotations; to include minimum number of major and minor cases in general surgery, orthopedic surgery, peripheral vascular surgery, endoscopic procedures, and two electives. A statement of proficiency from each supervising preceptor is required upon completion of each rotation. (0-315) F

## Sign Language Courses ♦♦♦♦♦

**SL 111 Sign Language I** 3 Sem Hrs  
Designed for people who have no knowledge of sign language. Introduces the student to American Sign Language, the language many deaf or hearing impaired adults use. Brief discussions of deaf culture are incorporated throughout the course. (45-0) FWS

**SL 112 Sign Language II** 3 Sem Hrs  
Prerequisite: SL 111 or demonstrated basic knowledge of American Sign Language. A continuation of SL 150, designed to give students a broader sign vocabulary while increasing their conversational fluency. (45-0) WS

**SL 121 Sign Language III** 3 Sem Hrs  
Prerequisite: SL 112 or demonstrated knowledge of American Sign Language. Builds upon skills, knowledge, and vocabulary gained in SL 111 and 112. During this course students will be asked to use their skills in the community. (45-0) O

## Sociology Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

**SOC 157 Projects in Community Service** 1 Sem Hr  
Student volunteers will be assigned in groups to assist agency staff in programs in the tri-city area working with populations of need. Students will be assigned on the basis of preferred interests. Supportive seminar will provide structure and supervision for an experience in the field of human services. Students may elect to take SOC 157, 158 and 159, however, only a total of three (3) credit hours can be earned in these courses. (15-30) EFW

**SOC 158 Projects in Community Service** 2 Sem Hrs  
Student volunteers will be assigned in groups to assist agency staff in programs in the tri-city area working with populations of need. Students will be assigned on the basis of preferred interests. Supportive seminar will provide structure and supervision for an experience in the field of human services. Students may elect to take SOC 157, 158, and 159, however, only a total of three (3) credit hours can be earned in these courses. (15-60) EFW

**SOC 159 Projects in Community Services** 3 Sem Hrs  
Student volunteers will be assigned in groups to assist agency staff in programs in the tri-city area working with populations of need. Students will be assigned on the basis of preferred interests. Supportive seminar will provide structure and supervision for an experience in the field of human services. Students may elect to take SOC 157, 158, and 159, however, only a total of three (3) credit hours can be earned in these courses. (15-90) EFW

**SOC 161 International Projects in Cross-Cultural Learning** 1 Sem Hr  
Student volunteers will be assigned to either community agencies providing cross-cultural experiences or to an international work experience. Supportive seminars will provide both structure and background knowledge of the particular country involved. (A minimum of 30 hours volunteer placement is required.) Credit may be earned in SOC 161 or IHU 161 but not both. (15-30) O

**SOC 162 International Projects in Cross-Cultural Learning** 2 Sem Hrs  
Student volunteers will be assigned to either community agencies providing cross-cultural experiences or to an international work experience. Supportive seminars will provide both structure and background knowledge of the particular country involved. (A minimum of 60 hours volunteer placement is required.) Credit may be earned in SOC 162 or IHU 162 but not both. (15-60) O

**SOC 211 Principles of Sociology** 3 Sem Hrs  
An introduction to the scientific study of society and social behavior including the basic concepts, theories, and methods of sociology. (45-0) A

**SOC 212 Social Problems** 3 Sem Hrs  
Prerequisite: SOC 211. An analysis of contemporary social problems within the theoretical framework of social change, value conflicts, and social deviation; an attempt to examine resulting implications for social policy. (45-0) FW

**SOC 214 Sociology of Substance Abuse** 3 Sem Hrs  
Prerequisite: SOC 211. A survey of the problem of substance abuse in contemporary society including its scope, distribution, and direct and indirect effects on society. Responses to the problem of substance abuse by business, industry, education, medicine, and the legal profession will be explored. (45-0) EO

**SOC 215 Sociology of Minority Groups (Inter-group Relations)** 3 Sem Hrs  
Prerequisite: SOC 211. A sociological approach to study of prejudice and discrimination against minority groups, primarily in the United States. The emphasis is upon the analysis of both causes and solutions to the problems of prejudice and discrimination. (45-0) O



**SOC 216 The Black Experience** 4 Sem Hrs  
A survey course presenting several aspects of Black life using an interdisciplinary approach. The major units of study are Black culture, power and politics, Black family, business and economic development, and Black psychology. Each component will present an historical analysis as well as an overview of contemporary research and/or thought in the field. (60-0) O

**SOC 221 Marriage and Family** 3 Sem Hrs  
Prerequisites: SOC 211 or SOC 231 or PSY 211 or permission of instructor. A study of the family as an institution in society. Broad research approach encompassing aspects of historical and cross societal evidence of this institution as well as contemporary American pairing and child rearing practices. (45-0) A

**SOC 222 Sociology of Black Families** 3 Sem Hrs  
An examination of the patterned behavior of Black families. The strengths, weaknesses, and opportunities of varying patterns of family life will be explored. Situational analyses will be used to examine demographic characteristics, mobility, patterns of premarital dating and marriage, socialization and the future of the Black family in technological society. (45-0) O

**SOC 230 Physical Anthropology and Archeology** 4 Sem Hrs  
An introduction to the origin and evolution of humankind's physical and cultural development. Major emphases are on the evidence and theories of human evolution and a survey of Old World and New World archeology. This course may be taken as Social Science or Natural Science credit but cannot be counted as a lab science course. (60-0) DFW

**SOC 231 Cultural Anthropology** 3 Sem Hrs  
An introduction to humanity in its cultural setting. An emphasis will be given to the study of a diversity of non-industrialized cultures and the implications of that study for understanding our own culture. (45-0) DFW

**SOC 235 Myths of the World** 3 Sem Hrs  
An analysis of several major myths in terms of their history and their relationship with religion, culture, literature, music, art, and science. Also explored will be the relationship between the myths. (45-0) O

**SOC 240 Sociology of Sex and Gender** 3 Sem Hrs  
An examination of the division of social roles between males and females. Topics will include functional roles, personality development, and sexual behavior. Emphasis will be placed on cross-cultural data and on comparison of divergent theories of gender roles. (45-0) O

**SOC 245 Death Education** 3 Sem Hrs  
Concerned with an analysis of the nature of death. Attention is given to some of the philosophical, religious, cultural, biological, psychological, sociological, economic and legal aspects of death and dying. Credit may be earned in SOC 245 or PEH 245 but not in both. (45-0) DFW

**SOC 246 Contemporary Health Issues** 3 Sem Hrs  
Designed to identify and examine contemporary health issues. Explores the environmental, personal, and social factors affecting individual and social mental and physical health. Includes guideline for becoming an intelligent consumer of health care products and services. Credit may be earned in SOC 246 or PEH 171 but not in both. (45-0) FW

**SOC 250 Introduction to Social Work** 3 Sem Hrs  
An introduction to social work as a helping profession within the field of human services. Social work values, practice strategies, and helping skills will be treated in the context of the social welfare institution. Students planning to transfer to a four-year social work program may also need to take either SOC 157, 158 or 159 to meet the experience requirement necessary for admittance to the social work program at transfer institutions. (45-0) EA

**SOC 252 Community Organization** 3 Sem Hrs  
Prerequisite: SOC 211. An introduction to the structure and process through which communities function. Focus is upon two major components of community and their roles in solving community problems. Neighborhoods are explored as informal systems of social support, while the network of public and private agencies providing professional

human services are explored as formal community resources. Designed chiefly for students enrolled in human services curricula to develop their understanding of communities and the resources available to them for problem solving. (45-0) O

**SOC 265 Third World Development** 4 Sem Hrs  
An interdisciplinary description and analysis of processes and conditions which created and maintain the "third world." Population, physical environment, historical, political, social and economic factors will be addressed. Current concepts and development theories will be explored and applied. Credit may be earned in SOC 265 or GEO 255 but not in both. (60-0) W

**SOC 268 International Studies in Sociology** 4 Sem Hrs  
The student will select a major institution of society for the purpose of comparative study. An analysis and comparison of that institution in preselected societies will be the major focus of the course. Includes classroom lectures, individual consultation and international field study. Expenses for field study must be borne by the student. By prior arrangement with appropriate faculty, students may also take International studies in the following disciplines: GEO 268, ECN 268, GB 268. (60-0) O

**SOC 271 Religion and Society** 3 Sem Hrs  
An examination of religion as a social institution and cultural belief system including a survey of major world religions such as Judaism, Christianity, Islam, Hinduism, Buddhism, Confucianism, indigenous American religions and new religious movements. Cross-societal material is presented to enhance understanding the common elements of religious systems as well as their diversity. Various theoretical approaches to the study of religion are considered in order to analyze the functions of religion in human societies. (45-0)

**SOC 275 Sociology of Stress** 3 Sem Hrs  
Designed to help students understand stress as a built-in characteristic of the world in which they live and to learn ways in which stress may be managed to bring about individual growth. Pervasive stressors in everyday life, stress tolerance, linkages between stress and physical and emotional illness, and the value of individual coping patterns will be examined in the course. A range of stress management strategies will be explored. (45-0) A

**SOC 279 Introduction to Social/Behavioral Science Research** 3 Sem Hrs  
Prerequisite: One of the following courses ECN 221, POL 103, POL 111, PSY 211, SOC 211 or permission of instructor. Introduces social and behavioral research utilizing a multidisciplinary approach. Shows how to formulate research questions, search the literature, select a research design, collect and analyze data, and draw useful conclusions. (45-0) S

**SOC 280 Introduction to Social/Behavioral Science Research/Project** 4 Sem Hrs  
Prerequisite: One of the following courses ECN 221, POL 103, POL 111, PSY 211 or SOC 211 or permission of instructor. Introduces social and behavioral research utilizing a multidisciplinary approach. Shows how to formulate research questions, search the literature, select a research design, collect and analyze data, and draw useful conclusions. Includes a research paper. (60-0) S

**SOC 281 An Introduction of SPSS** 1 Sem Hr  
Prerequisite: Some statistics or research background or taking such a course, e.g., SOC 280, concurrently. Introduces the Statistical Package for the Social Sciences (SPSS), a comprehensive set of statistical tools for many types of data analysis. Emphasizes the basic procedures, commands, and tools of SPSS. Credit may be earned in SOC 281 or CPS 108 but not in both. (15-0) O

**SOC 282H Seminar in Social Issues** 3 Sem Hrs  
Prerequisite: Honors program participant or permission of instructor. An integrated study involving exploration and development of critical thinking, analysis and problem-solving skills with an interdisciplinary approach focusing on a selected social issue. (45-0) WD

**SOC 290-299 Special Projects in Sociology** O



## SPA 101 Hispanic Civilizations

2 Sem Hrs

**SPA 105** Conversational Spanish - Introduction

2 Sem Hrs

SPA 106 Conversational Spanish - Continuation

2 Sem Hrs

**SPA 107 Spanish for Medical Personnel**

1 Sem Hr

**SPA 111 Spanish One**

4 Sem Hrs

SPA 112 Spanish Two

4 Sem Hrs

SPA 150 Central Mexico

**2 Sem Hrs**

**SPA 151 Mayan Mexico**

**2 Sem Hrs**

**SPA 211 Spanish Three**

4 Sem Hrs

SPA 212 Spanish Four

4 Sem Hrs

**SPA 275 Introduction of Hispanic Fiction**

3 Sem Hrs

SPA 290-299 Special Projects in Spanish O

**SPH 100 Basic Communication Skills**

3 Sem Hrs

**SPH 112 Fundamentals of Oral Communication**

3 Sem Hrs

**SPH 114 Interpersonal Communications**

3 Sem Hrs

**SPH 202 Oral Communications for Managers**

3 Sem Hrs

SPH 212 Listening

3 Sem Hrs

**SPH 214 Discussion Techniques**

3 Sem Hrs

**SPH 215 Introduction to Theatre**

3 Sem Hrs

SPH 216 Theatre History

3 Sem Hrs

**SPH 217 Technical Theatre**

3 Sem Hrs

**SPH 218 Interpreter's Theatre**

3 Sem Hrs

**SPH 219 The Art of Story Telling**

3 Sem Hrs

175



selecting literature and material for story telling. Provides practice in literature by reading aloud and story telling. The student will be required to perform in five categories of story telling. (3-0) O

### **SPH 224 Nonverbal Communication 3 Sem Hrs**

Focuses on nonverbal communication as it relates to interpersonal social, business and professional behavior. Analyzes kinesics, facial affect, eye contact, body movement and posture, physical characteristics, haptics, chronemics, proxemics, artifacts and environment. Also discusses the prevalent theories underlying nonverbal behavior. (45-0) O

### **SPH 290-299 Special Projects in Speech/Oral Communications O**

## **Surgical Technology Courses ♦♦♦♦♦♦♦♦♦♦**

### **ST 100 Introduction to Health Care Service 3 Sem Hrs**

Prerequisite: BIO 132 or concurrent enrollment in BIO 132. Presents the history of medicine, epidemiological methods, and current problems and trends in the health care system. Selected global health care issues are discussed. Includes professional, legal, and ethical aspects of a multidisciplinary care system. (45-0) W

### **ST 107 Pharmacology in the Operating Room 2 Sem Hrs**

Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 110, 120, 130, 140. Introduction to anesthetic agents and other drugs commonly used in the operating room: their actions and uses, how they affect a surgical patient and how to observe for untoward reactions. (30-0) FD

### **ST 110 The Surgical Patient 2 Sem Hrs**

Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 107, 120, 130, 140. Basic concepts of operative patient care, such as preparation of patient for surgery, patient transportation, surgical incisions, wound healing, operative records, special procedures in the operating room, and the legal, moral and ethical responsibilities of surgical care. (30-0) FD

### **ST 120 Fundamentals of Surgical Technology 6 Sem Hrs**

Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 107, 110, 130, 140. Roles of surgical team members, sterilization and disinfection methods, surgical instruments, sutures and equipment, electrical safety, patient positioning and preparation, draping the sterile field, and care of supplies. Students begin to develop technical skills through laboratory practice; later operating room observational experiences are provided. (45-120) FD

### **ST 130 Surgical Anatomy 4 Sem Hrs**

Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 107, 110, 120, 140. Comprehensive regional study of human anatomy as encountered during surgery. Provides the basis for studies of surgical pathology, operative procedures and practical skills of surgical patient care. (45-45) FD

### **ST 140 Operative Procedures 4 Sem Hrs**

Prerequisites: Admission to the Surgical Technology program plus concurrent enrollment in ST 107, 110, 120, 130. Selected commonly-performed types of surgical procedures; the pathology leading to surgical intervention, the purposes of the surgery, problems which may arise, and the consequences of the surgery for the patient will be discussed in addition to the basic techniques utilized during the procedure and any special instrumentation. (60-0) FD

### **ST 200 Clinical Externship 12 Sem Hrs**

Prerequisites: ST 107, 110, 120, 130, 140 each with a minimum C (2.0) grade and consent of program coordinator. Supervised clinical experience in hospital operating room suites. Clinical instructors will evaluate each student's progress in the theoretical, behavioral, and practical application of concepts of surgical technology. (0-540) WD

### **ST 201 Operating Room Seminar 3 Sem Hrs**

Prerequisite: Concurrent enrollment in ST 200. Patient-monitoring devices and diagnostic tests, abnormalities and correlations with surgical patient conditions, and surgery for traumatic injuries. Discussion of

students' clinical experiences, the professional role of the Surgical Technologist, general review, and assigned research studies. (45-0) WD

### **ST 290-299 Special Projects in Surgical Technology O**

## **Skilled Trades Courses ♦♦♦♦♦♦♦♦♦♦**

### **SKCA 114 AutoCAD Introduction 2 Sem Hrs**

Prerequisite: SKDR 101 or permission of department. AutoCAD software used to draft two dimensional multiview drawings and three dimensional wire frame constructions. Completed projects include arrays, blocks, assigned properties, notations, and dimensions. Knowledge of the software, hardware and the MS-DOS operating system is acquired in the process of developing a Computer Aided Design and Drafting drawing for multi-pen plotting. Credit may be earned in either SKCAD 114 or CAD 114 but not both. (30)

### **SKCN 160 Computer Numerical Control Programming I 3 Sem Hrs**

Prerequisites: MS 114 or SKTR 181, and MATH 103 or MT 110 or SKMA 103, or basic knowledge of machining processes and trigonometry. Primary emphasis will be on manually programming machines with various capabilities, including absolute and incremental positional systems; tab sequential, word address, and menu driven formats; and machines with two-, three-, four-, and five-axis control. Secondary emphasis on computer assisted programming. Credit may be earned in SKCN 160 or CNC 160 but not both. (45-0)

### **SKCN 161 Computer Numerical Control Programming II 3 Sem Hrs**

Prerequisites: CNC 160 or SKCN 161. Advanced training in computer assisted programming methods for computer numerical control machines. Teaches various programming languages with emphasis on Compact II. Credit may be earned in SKCN 161 or CNC 161 but not both. (45-0)

### **SKCN 211 Mitsubishi 410 Control 4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches program methodology to produce quality parts using Mitsubishi 410 EIA/ISO language, including tooling setups, and machining with secondary emphasis on parameters and maintenance. Uses Saginaw Machine Systems Accu-Cell 410 two-axis flat-bed front turning center for demonstration and lab activities. Credit may be earned in CNC 211 or SKCN 211 but not in both. (57-3,40 OJT)

### **SKCN 212 Heidenhain TNC-151 Control 4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches program methodology to produce quality parts using the Heidenhain TNC-151 Dialog or EIA/ISO languages, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Bridgeport Series II Interact II three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 212 or CNC 212 but not in both. (57-3, 40 OJT)

### **SKCN 213 OSP-5000 LG Control 4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the OSP-5000 LG EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Okuma LB-15 two-axis slant-bed rear turning center for demonstration and lab activities. Credit may be earned in SKCN 213 or CNC 213 but not both. (57-3, 40 OJT)

### **SKCN 214 Anilam GXM Control 4 Sem Hrs**

Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the Anilam GXM EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the YCM Supermax 40 three-axis vertical milling machine for lab and demonstra-



tion. Credit may be earned in SKCN 214 or CNC 214 but not in both. (57-3,40 OJT)

**SKCN 215 General Numeric 10TF Control** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or prior experience. Teaches programming methodology to produce quality parts using the General Numeric 10TF EIA/ISO and conversational languages, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the MHP MTC-3 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 215 or CNC 215 but not in both. (57-3,40 OJT)

**SKCN 217 Japax JAPT 3J Control** **4 Sem Hrs**  
Prerequisites: CNC 212 or SKCN 212, or CNC 214 or SKCN 214, or CNC 216 or SKCN 216 or prior experience. Teaches the programming methodology for producing quality parts using the JAPT 3J EIA/ISO language, including wire alignment, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Japax LV3 four-axis wire electrical discharge machine (EDM) for lab and demonstration. Credit may be earned in SKCN 217 or CNC 217 but not in both. (57-3,40 OJT)

**SKCN 218 Boston Digital SPC-II Control** **4 Sem Hrs**  
Prerequisite: CNC 216 or SKCN 216, or prior experience. Teaches programming methodology to produce quality parts using the Boston Digital SPC-II EIA/ISO language, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Boston Digital BostoMatic 1000 five-axis vertical machining system for lab and demonstration. Credit may be earned in SKCN 218 or CNC 218 but not in both. (57-3,40 OJT)

**SKCN 221 Concept** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming experience. Teaches off-line programming software for two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work, operating on a PC and able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Concept programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center, or wire EDM. Credit may be earned in SKCN 221 or CNC 221 but not in both. (57-3,40 OJT)

**SKCN 222 E-Z CAM IV** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for 2-D mill work, operating on a PC and downloading to the Heidehain TNC-151 control on the Bridgeport Series II Interact II three-axis milling machine. Teaches the creation of error free part programs using E-Z CAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill. Credit may be earned in SKCN 222 or CNC 222 but not in both. (57-3,40 OJT)

**SKCN 223 TM-APT-GL** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work, operating on an Okuma TM-APT-G programming terminal downloading to the OSP-5000 LG control on the Okuma LB-15 turning center. Emphasizes the creation of error free part programs using the TM-APT-GL programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center. Credit may be earned in SKCN 223 or CNC 223, but not both. (57-3,40 OJT)

**SKCN 224 Anicam** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160 and CIS 118 or equivalent programming experience. Teaches off-line programming software for two-axis lathe work and three-axis mill work, operating on a PC and downloading to the Anilam

GXM control on the YCM Supermax 40 milling machine, the General Numeric 10TF control on the MHP MTC-3 turning center, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Anicam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center or mill. Credit may be earned in SKCN 224 or CNC 224 but not in both. (57-3,40 OJT)

**SKCN 225 Mastercam** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160 and CIS 118 or equivalent programming experience. Uses an off-line programming software for up to four-axis lathe work, up to five-axis mill work, and up to four-axis wire EDM work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, JAPT 3J control on the Japax wire EDM, as well as some other machining equipment. Emphasizes the creation of error free part programs using the Mastercam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in SKCN 225 or CNC 225 but not in both. (57-3,40 OJT)

**SKCN 226 CAM M-32/M-2** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Teaches programming methodology to produce error free programs using the Mazak M-32/M-2 EIA/ISO programming language on a PC with secondary emphasis on tooling setups, part setups, machining, and downloading to the Mazak VQC-15/40 M-2 four-axis double column vertical machining center using the Mazak CAM M-2 Programming software. Credit may be earned in SKCN 226 or CNC 226 but not in both. (57-3,40 OJT)

**SKCN 227 XL/NC** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. Uses an off-line programming software for two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work operating on a PC downloading to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the XL/NC programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 227 or CNC 227 but not in both. (57-3,40 OJT)

**SKCN 228 Nicam IV** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. CNC 161 or SKCN 161 is recommended. Uses off-line programming software for up to four-axis lathe work and up to four-axis mill work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the NICAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system. Credit may be earned in SKCN 228 or CNC 228 but not both. (57-3,40 OJT)

**SKCN 229 Expedite 3-D** **4 Sem Hrs**  
Prerequisites: CAD 114 or SKCA 114, MS 115 or SKTR 182, CNC 160 or SKCN 160, and CIS 118 or equivalent programming experience. CNC 161 or SKCN 161 is recommended. Teaches off-line programming software for up to four-axis lathe work and up to five-axis mill work, operating on a PC and able to download to the SPC-II control on the BostoMatic machining system, as well as other machining equipment. Emphasizes the creation of error free part programs using the Expedite 3-D programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 229 or CNC 229, but not both. (57-3,40 OJT)



**SKCN 251 Mitsubishi 410 Control, Advanced 4 Sem Hrs**  
Prerequisite: CNC 211 or SKCN 211, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Mitsubishi 410 EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Saginaw Machine Systems Accu-Cell 410 two-axis flat-bed front turning center for lab and demonstration. Credit may be earned in SKCN 221 or CNC 221 but not in both. (57-3,40 OJT)

**SKCN 252 Heidenhain TNC-151 Control, Advanced 4 Sem Hrs**  
Prerequisite: CNC 212 or SKCN 212, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Heidenhain TNC-151 Dialog or EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Bridgeport Series II Interact II three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 222 or CNC 222 but not in both. (57-3, 40 OJT)

**SKCN 253 OSP-5000 LG Control, Advanced 4 Sem Hrs**  
Prerequisite: CNC 213 or SKCN 213, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the OSP-5000 LG EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Okuma LB-15 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 223 or CNC 223 but not in both. (57-3,40 OJT)

**SKCN 254 Anilam GXM Control Advanced 4 Sem Hrs**  
Prerequisite: CNC 214 or SKCN 214, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the Anilam GXM EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the YCM Supermax 40 three-axis vertical milling machine for lab and demonstration. Credit may be earned in SKCN 224 or CNC 224 but not in both. (57-3,40 OJT)

**SKCN 255 General Numeric 10TF Control Advanced 4 Sem Hrs**  
Prerequisite: CNC 215 or SKCN 215, or equivalent programming experience. Emphasizes canned cycles and subprograms, plus all aspects of producing quality parts using the General Numeric EIA/ISO and conversational control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the MHP MTC-3 two-axis slant-bed rear turning center for lab and demonstration. Credit may be earned in SKCN 225 or CNC 225 but not in both. (57-3,40 OJT)

**SKCN 256 Mazatrol M-32/M-2 Control, Advanced 4 Sem Hrs**  
Prerequisite: CNC 216 or SKCN 216, or equivalent programming experience. Teaches canned cycles, subprograms, and programming from CAD files using the Mazak M-32/M-2 conversational programming language with secondary emphasis on parameters and maintenance. Uses the Mazak VQC-15/40 M-2 four-axis double column vertical machining center for lab and demonstration. Credit may be earned in SKCN 256 or CNC 256 but not in both. (57-3,40 OJT)

**SKCN 257 Japax JAPT 3J Control Advanced 4 Sem Hrs**  
Prerequisite: CNC 217 or SKCN 217, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the JAPT 3J EIA/ISO control, including wire alignment, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the Japax LV3 four-axis wire electrical discharge machine (EDM) for lab and demonstration. Credit may be earned in SKCN 227 or CNC 227 but not in both. (57-3,40 OJT)

**SKCN 258 Boston Digital SPC-II Control Advanced 4 Sem Hrs**  
Prerequisite: CNC 218 or SKCN 218, or equivalent programming experience. Teaches canned cycles and subprograms, plus all aspects of producing quality parts using the Boston Digital SPC-II EIA/ISO control, including tooling setups, part setups, and machining with secondary emphasis on parameters and maintenance. Uses the BostoMatic 1000 five-axis vertical machining system for lab and demonstration. Credit may be earned in SKCN 228 or CNC 228 but not in both. (57-3,40 OJT)

**SKCN 261 Concept Advanced 4 Sem Hrs**  
Prerequisites: CNC 221 or SKCN 221, or equivalent programming experience. Teaches the advanced powers of Concept software for more intricate programming of two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work, operating on a PC able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Concept programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center, or wire EDM. Credit may be earned in SKCN 261 or CNC 261 but not both. (57-3,40 OJT)

**SKCN 262 EZ CAM IV ADVANCED 4 Sem Hrs**  
Prerequisites: CNC 222 or SKCN 222, or equivalent programming experience. Teaches the advanced powers of E-Z CAM IV software for more intricate programming of 2-D mill work, operating on a PC and downloading to the Heidenhain TNC-151 control on the Bridgeport Series II Interact II three-axis milling machine. Emphasizes the creation of error free part programs using the E-Z CAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill. Credit may be earned in SKCN 262 or CNC 262 but not both. (57-3,40 OJT)

**SKCN 263 TM-APT-GL ADVANCED 4 Sem Hrs**  
Prerequisites: CNC 223 or SKCN 223, or equivalent programming experience. Teaches the advanced powers of TM-APT-GL software for more intricate programming of two-axis lathe work, operating on an Okuma TM-APT-G programming terminal and downloading to the OSP-5000 LG control on the Okuma LB-15 turning center. Emphasizes the creation of error free part programs using the TM-APT-GL programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center. Credit may be earned in SKCN 263 or CNC 263 but not both. (57-3,40 OJT)

**SKCN 264 Anicam Advanced 4 Sem Hrs**  
Prerequisites: CNC 224 or SKCN 224, or equivalent programming experience. Teaches the advanced powers of Anicam software for more intricate programming of two-axis lathe work and three-axis mill work, operating on a PC and downloading to the Anicam GXM control on the YCM Supermax 40 milling machine, the General Numeric 10TF control on the MHP as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Anicam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center or mill. Credit may be earned in SKCN 264 or CNC 264 but not both. (57-3,40 OJT)

**SKCN 265 Mastercam Advanced 4 Sem Hrs**  
Prerequisites: CNC 225 or SKCN 225, or equivalent programming experience. Teaches the advanced powers of Mastercam software for more intricate programming of up to four-axis lathe work, up to five-axis mill work, and up to four-axis wire EDM work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, JAPT 3J control on the Japax wire EDM, as well as other machining equipment. Emphasizes the creation of error free part programs using the Mastercam programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system, or wire EDM. Credit may be earned in SKCN 265 or CNC 265 but not both. (57-3,40 OJT)

**SKCN 266 Advanced Cam M-32/M2 4 Sem Hrs**  
Prerequisites: CNC 226 or SKCN 226, or equivalent experience. Teaches the use of macros, macro programming methodology, macro call statements, and nesting using the Mazak M-32/M-2 EIA/ISO programming language with secondary emphasis on parameters and maintenance. Software is ASCII text editor and a Griffio Brothers, Inc. GB\DataEntry M-32, GB\GeoEntry M-32, GB\DataTransfer, GB\DataPrint M-32, and GB\DataTranslate M-32 running on a PC. Uses the Mazak VQC-15/40 M-2 four-axis double column vertical machining center for demonstration and lab. Credit may be earned in SKCN 266 or CNC 266 but not both. (57-3,40 OJT)



**SKCN 267 XL/NC ADVANCED****4 Sem Hrs**

Prerequisites: CNC 227 or SKCN 227, or equivalent programming experience. Teaches advanced powers of the XL/NC software for intricate programming of two-axis lathe work, up to four-axis mill work, and up to four-axis wire EDM work operating on a PC able to download to the General Numeric 10TF control on the MHP MTC-3 turning center, JAPT 3J control on the Japax LV3 wire EDM, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the XL/NC programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 267 or CNC 267 but not both. (57-3,40 OJT)

**SKCN 268 Nicam IV Advanced****4 Sem Hrs**

Prerequisites: CNC 228 or SKCN 228, or equivalent programming experience. Teaches the advanced powers of the NICAM IV software for intricate programming of up to four-axis lathe work and up to four-axis mill work, operating on a PC and downloading to the S2PC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the NICAM IV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, machining center/system. Credit may be earned in SKCN 268 or CNC 268 but not both. (57-3,40 OJT)

**SKCN 269 Expedite 3-D Advanced****4 Sem Hrs**

Prerequisites: CNC 229 or SKCN 229, or equivalent programming experience. Teaches advanced powers of the Expedite 3-D software for intricate programming of up to four-axis lathe work and up to five-axis mill work, operating on a PC and downloading to the SPC-II control on the BostoMatic machining system, as well as some of the other machining equipment. Emphasizes the creation of error free part programs using the Expedite 3-D programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the turning center, mill, or machining center/system. Credit may be earned in SKCN 269 or CNC 269 but not both. (57-3,40 OJT)

**SKCN 270 ACU.CARV Advanced****4 Sem Hrs**

Prerequisite: CNC 230 or SKCN 230, or equivalent programming experience with the ACU.CARV software. Teaches advanced powers of the ACU.CARV software for more intricate programming of up to five-axis mill work and up to four-axis wire EDM work, operating on a PC and downloading to the JAPT 3J control on the Japax wire EDM, SPC-II control on the BostoMatic machining system, as well as some of the other prismatic machining equipment. Emphasizes the creation of error free part programs using the ACU.CARV programming language, including part geometry, tool path, and debugging with secondary emphasis on the downloading of a program to the mill, machining center/system, or wire EDM. Credit may be earned in SKCN 270 or CNC 270 but not both. (57-3,40 OJT)

**SKCN 280 ACU.CARV Ads Off-Line Programming System****4 Sem Hrs**

Prerequisite: CNC 270 or SKCN 270, or previous programming experience with AutoCAD and ACU.CARV softwares. Emphasizes the use of AutoCAD and ACU.CARV ADS softwares to create surfaces and tool paths for programming of up to five-axis mill work and up to four-axis wire EDM work. Includes the downloading of error-free PC created programs to JAPT 3J control on the Japax wire EDM, SPC-II control on the BostoMatic machining system, as well as some other prismatic machining equipment. Credit may be earned in CNC 280 or SKCN 280 but not in both. (57-3,40 OJT)

**SKCT 101 Industrial Millwright Procedures****3 Sem Hrs**

Prerequisite: SKDR 101. A course for millwrights emphasizing blueprint reading, layout of typical industrial construction, equipment, and safety and guarding. Topics covered include plan and elevation prints of building footings and foundation, mechanical services, equipment and machinery foundations, ventilation systems, catwalks, decking, platforms, and various conveying systems. (45)

**SKCT 102 Building Materials****3 Sem Hrs**

To learn development, properties, and composition of various building materials. To develop perception for economical and appropriate appli-

cation of building materials. To learn various sources of technical data about residential and industrial building materials. To develop skills of building material application. (45)

**SKCT 105 Building Site Surveying****3 Sem Hrs**

Prerequisite: SKCT 114. Course designed to introduce students to the tools and instruments used for surveying. Methods and procedures of developing and building layout are also included. (45) O

**SKCT 106 Concrete and Foundations****4 Sem Hrs**

Prerequisite: SKCT 102. A study of the practical methods and procedures of preparing and setting concrete forms for such areas as basement floors, garage floors, driveways, sidewalks, patios, etc. (45-30) O

**SKCT 111 Construction Print Interpretation****3 Sem Hrs**

Instruction in this course includes trade terminology and description of the various views of working drawings, pictorial drawings, and the basic procedures in development of these drawings. Also included is the interpretation of specifications and job information as they pertain to construction and layout. Credit may be earned in either SKCT 111 or RC 101 but not both. (45)

**SKCT 113 Carpentry Math****2 Sem Hrs**

Prerequisite: Students scoring 19 or higher on the numerical skills portion of ASSET can waive this course. Acquaints student with basic mathematical processes relating to construction and includes practical demonstrations. Covers fractions, decimals, ratios and percentages. Credit may be earned in either SKCT 113 or RC 113 but not both. (30)

**SKCT 114 Framing Square****3 Sem Hrs**

Prerequisite: RC 113, or a score of 19 or higher on the numerical skills portion of ASSET. The use of the framing square in construction. Credit may be earned in either SKCT 114 or RC 114 but not both. (45)

**SKCT 201 Rough Framing and Outside Framing****4 Sem Hrs**

Prerequisite: SKCT 114. Instruction is given in the construction of techniques used in all phases of framing and exterior finishing. (30-60) O

**SKCT 204 Inside Finishing and Hardware****3 Sem Hrs**

Prerequisite: SKCT 114. Instruction includes principles of interior construction, joinery and installation, and finishing of all types of interior trim. (45-30) O

**SKCT 205 Cabinet Making and Millwork****5 Sem Hrs**

Prerequisite: SKCT 204. A study is made of the construction of, the placement of, and installation procedures of cabinets used in residential and commercial building. (45-60) O

**SKDR 101 Sketching and Blueprint Reading****4 Sem Hrs**

Topics include: The graphic language and design, lettering, sketching, and shape descriptions, multiview projections, sectional views, auxiliary views, shop processes, thread fasteners and springs, and print reading of typical shop blueprints. (60) A

**SKDR 111 Drawing II****3 Sem Hrs**

Prerequisite: SKDR 101. A continuation of SKDR 101. Topics include multiview and pictorial sketching and drawing, sections drawing, dimensioning and tolerancing. (45) FW

**SKDR 121 Descriptive Geometry****3 Sem Hrs**

Prerequisite: SKDR 111. Topics include orthographic projections, primary auxiliary views and lines, planes, successive auxiliary views, piercing points, intersection of planes, and angle between planes. (45) O

**SKDR 128 Geometric Tolerancing****2 Sem Hrs**

Prerequisite: SKDR 111 or permission of department. Primary emphasis is on geometric symbols used in place of written notes on industrial drawings including datums, symbols, and other items tolerancing to the geometry of the part. Credit may be earned in either SKDR 128 or DRF 128 but not both. (30) O



**SKDR 130 Tool and Die Design****4 Sem Hrs**

Prerequisite: SKDR 111. Topics include: design of jigs and fixtures, design of gaging mechanisms, design of automatic tooling, machining cost calculations. The student will use this data to make class presentations with questions and answer sessions. (60) W

**SKDR 131 Pattern Design I****3 Sem Hrs**

Prerequisite: SKDR 111. Course covers terms and definitions of pattern design. Students will learn how to make calculations from tables and drawing, estimate weights from pattern charts and materials codes, and sketch and detail typical pattern designs. (45) W

**SKDR 141 Pipe and Tube Isometrics****3 Sem Hrs**

Sketching course for industrial pipefitters includes all mensurations for layout and construction. (45) F

**SKEL 101 Basic Electronics****6 Sem Hrs**

Prerequisite: SKMA 113. The first course in a series to train electrician apprentices in the theory and application of electronics to industrial control systems. Basic electronic devices will be discussed, along with how they work and their electrical characteristics. Simple electronic circuits will be set up on trainers to illustrate the application of the devices. Troubleshooting techniques and basic test instruments will be discussed and used. (90) F

**SKEL 102 Industrial Electronics****4 Sem Hrs**

Prerequisite: SKEL 101. The second course in a series to train electrician apprentices in the theory and application of electronics to industrial control systems. Application of basic electronic devices to industrial control systems will be discussed. Major topics will be digital solid state logic and power control using SCR's and TRIAC's. Troubleshooting techniques and basic test instruments will be discussed and used. (60) W

**SKEL 106 Electricity I Applied****2 Sem Hrs**

Designed to acquaint the student with basic concepts of electricity, including history, terminology, code development, licensing, alternating and direct current/voltage theory, simple circuit calculations, schematics, residential electrical, electrical components and control circuits. (30)

**SKEL 107 Electricity II Applied****2 Sem Hrs**

Prerequisite: SKEL 106. Designed to further the study of electrical applications. Students should have prior understanding of basic electrical terms, as well as some ability to solve problems in a series of parallel circuits. The course will provide an in-depth study of frequency, inductance, capacitance, three-phase power, peak-effective-average voltage, circuits that contain resistors, coils, and capacitors, lost power and power factor correction, and impedance. A review and pre-test will be given the first night of class. (30)

**SKEL 111 Conventional Controls****3 Sem Hrs**

This course is the first of a series of courses on conventional industrial controls. Topics include an overview on control systems, construction of control components, control input devices, system design, control blueprint reading and troubleshooting. Credit may be earned in SKEL 111 or SKOT 191 but not in both. (45) FW

**SKEL 121 Advanced Controls I****4 Sem Hrs**

Prerequisite: SKEL 102. Topics include: vacuum and vapor tubes, resistance welding controls, induction heating, motors, inverters, polyphase rectifiers, op-amps transducers, instrumentation, closed loop controls, servo systems, temperature controls, troubleshooting. (75) F

**SKEL 122 Advanced Controls II****4 Sem Hrs**

Prerequisite: SKEL 121. Present students with basic concepts and hands-on experience with programmable digital control systems. Emphasis placed on hardware, program (software) entry, R-T-C math, documentation, trouble-shooting, communication links (generic) and peripheral equipment. (60) W

**SKEL 131 AC/DC Machinery****3 Sem Hrs**

Prerequisite: SKMA 113. This course is one in a series of courses on conventional industrial controls. Topics include physics of electromotive forces, armature reaction, induction, DC generator types, AC generators, DC motors, DC motor starters, transformers, AC motors and variable speed drive systems. (45) S

**SKEL 141 Electrical Shop****3 Sem Hrs**

The first 30 hours of class is spent on the National Electrical Code and the JIC Code for mass production equipment. The final 15 hours in the class cover principles of power hydraulics, directional controls, hydraulic pumps, accessories, and industrial hydraulic circuits. (45) S

**SKGM 162 Engine Service****5 Sem Hrs**

Prerequisite: GM Apprentice or GM Dealership sponsor. Emphasizes engine servicing, necessary for engine repair and maintenance. Includes the design, construction, and operation of gasoline and diesel engines. Credit may be earned in SKGM 162 or AGM 162 but not both. (35-105) F

**SKGM 183 Specialized Electronics Training****4 Sem Hrs**

Provides the beginning technician with skills necessary for competent electrical fault isolation, system diagnosis, and repair. Credit may be earned in SKGM 183 or AGM 183 but not both. (60-12) F

**SKGM 187 Electronic Engine Controls/Drivability****9 Sem Hrs**

Prerequisites: SKGM 162/AGM 162. Studies complete emission systems, fuel delivery functions, fuel injection, electronic ignition systems, engine tuneup and drivability. Emphasizes computerized engine control, and the use of accurate and complete methods in the diagnosis of engine performance complaints. Credit may be earned in SKGM 187 or AGM 187 but not both. (60 - 180) W

**SKGM 260 Suspension Systems****5 Sem Hrs**

Prerequisites: GM Dealership Sponsor and SKGM 162 or AGM 162. Studies the nomenclature and operating principles of steering and suspension systems. Includes wheel alignment geometry, adjustment methods, and operation of alignment equipment with emphasis placed on methods of adjustment and repair necessary for quality steering and suspension service. Credit may be earned in SKGM 260 or AGM 260 but not both. (32-112) F

**SKGM 272 Automatic/Electronic Transmissions****8 Sem Hrs**

Prerequisites: SKGM 162 or AGM 162. Studies the functional service skills for automatic transmissions and transaxles including nomenclature, fundamentals of operation, and diagnosis of malfunctions and electronic controls. Emphasizes use of special tools and equipment necessary in diagnosis and repair. Credit may be earned in SKGM 272 or AGM 272 but not both. (64-144) W

**SKGM 284 Brake Systems****4 Sem Hrs**

Prerequisites: SKGM 160 & SKGM 162 or AGM 160 & 162. Studies service methods by understanding the nomenclature and operating principles of the hydraulic and mechanical systems of shoe and disc brake assemblies. Includes Anti-lock Brake, and Traction Control Systems with emphasis on repair procedures on brake system components necessary for quality and safe brake system servicing. Credit may be earned in SKGM 284 or AGM 284 but not in both. (25-75) S

**SKGM 286 Drivelines and Manual Transmissions****3 Sem Hrs**

Prerequisites: SKGM 162 or AGM 162. Studies nomenclature, fundamentals of operation, and diagnosis of malfunctions with emphasis on service operations of clutches, standard transmissions, standard transaxles, driveshafts, driveaxles, and differentials. Credit may be earned in SKGM 286 or AGM 286 but not both. (15-45) S

**SKMA 101 Apprentice Mathematics I****2 Sem Hrs**

Review of basic mathematics principles. Topics include: whole numbers, fractions, decimals, percents, metric system, operations of polynomials, rational numbers, polynomials, equations, exponents, and radicals. (30) A

**SKMA 102 Mathematics II****4 Sem Hrs**

Prerequisite: SKMA 101. Introduction to algebra. Topics include: linear equations with applications, exponents and radicals, quadratic equations, ratio, proportion, and variation. (60) FW

**SKMA 103 Mathematics III****4 Sem Hrs**

Prerequisite: SKMA 102. Introduction to geometry and trigonometry. Topics include area and volume formulas with practical applications of screw, screw threads, belts, pulleys, gear wheels, and use of electronic calculator. (60) FW



**SKMA 111 Applied Integrated Electrical Math I 3 Sem Hrs**

Prerequisite: high school algebra or equivalent. This course is the first of a series of electrical mathematics courses which is intended to give an electrical apprentice the necessary background to maintain and service industrial control equipment. Included is the study of basic concepts of electricity, the mathematical solution of DC circuits, and basic circuit laws. Although mathematics as applied to electrical circuits will be studied, it is assumed that students entering this course will have a basic understanding of mathematics through high school algebra. (45) F

**SKMA 112 Applied Integrated Electrical Math II 5 Sem Hrs**

This course is the second in a series of electrical mathematics courses intended to give an electrical apprentice the necessary background to maintain and service industrial control equipment. It will include the study of basic concepts of efficiency, inductance, magnetism, meters, transformers, wire sizes, and alternating current. Instruction in trigonometry will be provided to assure the student has a basic understanding in the area. (75) W

**SKMA 113 Applied Integrated Electrical Math III 3 Sem Hrs**

Prerequisite: SKMA 112. This course is the third in a series of electrical mathematics and circuit analysis intended to give an electrical apprentice the necessary background to maintain and service industrial control equipment. It will include a study of capacitance, capacitive reactance, vectors, phasors, series AC circuits, power factor and three-phase systems. Trigonometry and pythagorean mathematics will be used in the computation of the phase relationships of the various quantities studied. (45) S

**SKMA 115 Mathematics-Electrician/Process****Instrument Trainee****5 Sem Hrs**

(Contract Only) This course is designed to provide electricians and process instrument trainees with sufficient mathematics prior to their required electrical theory courses. Topics covered include review of arithmetic and signed numbers, powers and roots, scientific notions, units and rounding, graphs, ratio and proportion, algebra, basic trigonometry, and vectors. (75) O

**SKMT 101 Hydraulics and Pneumatics I 3 Sem Hrs**

Beginning course in oil and air fluid power systems commonly found in industry. Specifically the study of the physical description, function and application of components. Topics include pumps, compressors, actuators, valves, conditioners, instruments, air/oil components, fluid properties, and their representative graphic symbols. (45) FW

**SKMT 102 Hydraulics and Pneumatics II 3 Sem Hrs**

Prerequisite: SKMT 101. Advanced course in fluid power designed for machine repair, pipefitters and plumber trades. Analysis of common hydraulic and pneumatic components and circuits. Includes building of machine tool circuits and troubleshooting. Special systems such as hydrostatic transmissions and electrohydraulic servos, and ladder diagramming of pneumatic control circuits. Mathematics and graphic symbols used in troubleshooting. (45) WS

**SKMT 111 Metals 3 Sem Hrs**

Topics covered are temperature measurement by color, hardness, strengths, fatigue properties, steels, plastics, cast iron, copper, brass, bronze, aluminum, their applications with respect to wear, corrosion, and design. Credit may be earned in SKMT 111 or WELD 111 but not both. (45)WO

**SKMT 112 Ferrous Heat Treatment 2 Sem Hrs**

Designed to acquaint students with various forms of heat treatment applied to plain carbon steels, cast iron, alloy tool steel, and stainless steel. Course will also include steel classification and machinability. (30) O

**SKMT 151 Power Transmission 3 Sem Hrs**

Fundamentals of power transmission including bearings, chain drives, clutches and brakes, conveyor components, shaft couplings, flat belt drives, open gear drives, enclosed gear drives, electric motors, toothed belt drives, V-belt drives, variable speed drives, and specialties. (45) W

**SKMT 161 Industrial Rigging and Safety 2 Sem Hrs**

This course is a study of the methods of safe transfer of loads. It provides comprehensive, easy-to-understand, and reliable information of the

entire field of rigging operations. It also discusses techniques and methods to accomplish the rigger's task with the greatest safety for all of the workers on a project, as well as for passers-by and the public in general. "Safety is no accident" is stressed. (30) FW

**SKMT 171 Sheetmetal I 2 Sem Hrs**

Development of geometrical elements of structures, their intersections by radial and triangulation methods of sheetmetal layout, the drawing of development layouts and the forming of actual models with sheetmetal. (30) FW

**SKMT 172 Sheetmetal II 3 Sem Hrs**

Prerequisite: SKMT 171. Continuation of Sheetmetal I. Projects involve fabrication of complex pieces to actual specification using tools common to the trade. (45) FW

**SKMT 173 Sheetmetal III 3 Sem Hrs**

Prerequisite: SKMT 172. Continuation of Sheetmetal Layout II. Emphasis placed on the layout and construction of patterns found in the industrial plant. Special projects will be assigned. (45) WS

**SKMT 231 Fundamentals of Foundry Technology 3 Sem Hrs**

Prerequisite: Foundry experience or permission of department. Provides an overview of all the components that make up a modern foundry. Participants will become familiar with the interrelationship between the metallurgy, melting, production engineering, core, molding, finishing, and reliability and quality control departments. Special emphasis is placed on how each department is dependent upon the other and what affect each has on the production of a quality product at a competitive cost, through the use of a statistical process control. (45) O

**SKMT 232 Foundry II 3 Sem Hrs**

Prerequisite: SKMT 213. Continuation of Foundry I course with emphasis on the design and applications in foundry operations. (45) O

**SKOT 191 Machine Controls I 3 Sem Hrs**

This course is the first of a series of courses on conventional industrial controls. Topics include an overview on control systems, construction of control components, control input devices, system design, control blueprint reading and troubleshooting. Credit may be earned in either SKOT 191 or SKEL 111 but not both. (45) FW

**SKOT 192 Machine Controls II 3 Sem Hrs**

Prerequisite: SKOT 191. Machine Controls II is a continuation of Controls I with special emphasis placed on diagnostic troubleshooting techniques. Primary objective of the course is to enable maintenance personnel to discuss machine functions or malfunctions with machine and control system designers. The course will also benefit toolmakers and machine builders to understand the overall operation of complex machinery they build and/or assemble. (45) O

**SKPH 101 Applied Physics 4 Sem Hrs**

Prerequisite: SKMA 103. Metric measurement, means of physical description, review of applied plane and solid geometry, matter, mechanical properties of solids, fluids, review of trigonometry as related to force and acceleration, static equilibrium energy and power related to ability to do work, friction and its effects, simple machines, hydraulic and pneumatic principles, fluids in motion, water and airwaves, temperature, heat transfer, electricity, magnetism and alternating currents. (60) FW

**SKPT 101 Industrial Piping 4 Sem Hrs**

Basic sanitation principles, terminology, materials classification, drainage systems, waste disposal system, pipe sizing and layout. Industrial piping situations involving gasoline, acid plating solutions, gases, safety, code requirements. (60) W

**SKPT 106 Pipefitters Handbook 3 Sem Hrs**

Prerequisite: SKMA 103. Review of mathematical calculations including geometry and trigonometry. Includes: pipe bends, linear expansion of piping, tank capacities, leverage, methods of layout angles, pipe-fitting calculations, pipe-welding layout, and reference tables. Credit may be earned in SKPT 106 or WELD 112 but not both. (45-0) S



**SKPT 111 Stationary Boiler Engineering I****2 Sem Hrs**

Orientation to power plant operations including boiler safety rules and regulations. General operating procedures for various types of boilers, uses and types of fuels and their sources; elementary chemistry of combustion. Credit may be earned in either SKPT 111 or CVI 1037 but not both. (30) F

**SKPT 112 Stationary Boiler Engineering II****2 Sem Hrs**

Prerequisite: SKPT 111 or permission of department. This course includes boiler settings, combustion equipment, operation and maintenance of boilers, pumps, reciprocating steam engines, valve operating mechanisms. Credit may be earned in SKPT 112 or CVI 1038 but not in both. (30) W

**SKPT 113 Stationary Boiler Engineering III****2 Sem Hrs**

Prerequisite: SKPT 112 or permission of department. Automatic boiler operation. Forced and induced draft systems. Steam turbines and auxiliaries, auxiliary steamplant equipment, cooling towers, boiler feed water treatment and heating. Credit may be earned in SKPT 113 or CVI 1039 but not in both. (30) F

**SKPT 114 Stationary Boiler Engineering IV****3 Sem Hrs**

Prerequisite: SKPT 113 or permission of department. This course includes air compressors of the following types: centrifugal, rotary screw, large reciprocating compressors and drives; boiler feed water chemical treatment. Credit may be earned in either SKPT 114 or CVI 1040 but not both. (30) W

**SKPT 121 Refrigeration and Air Conditioning****3 Sem Hrs**

Principles of air conditioning and heating. Content includes the basic refrigeration cycle, comfort cooling systems, trouble shooting, installation, selection of equipment, heating systems, control units, and humidifiers. Credit may be earned in either SKPT 121 or CVR 1001 but not both. (45) FW

**SKPT 122 Domestic Refrigeration I: Household Units****3 Sem Hrs**

Prerequisite: SKPT 121 and SKMA 111. Information needed to understand and repair dehumidifiers and air conditioners. Primary focus will be on hands-on troubleshooting both the electrical and sealed system components. Credit may be earned in either SKPT 122 or CVR 1002 but not both. (45)

**SKPT 123 Commercial Refrigeration I****3 Sem Hrs**

Prerequisite: SKPT 122. Information and hands-on tasks needed to properly install components and troubleshoot light commercial units. Credit may be earned in either SKPT 123 or CVR 1003 but not both. (45)

**SKPT 124 Domestic Refrigeration II: Household Units****3 Sem Hrs**

Prerequisite: SKPT 122 and SKMA 111. Troubleshooting domestic refrigeration systems. Primary focus will be on the electrical components and system parts in frost-free, conventional and cyclematic units. Credit may be earned in either SKPT 124 or CVR 1004 but not both. (45)

**SKPT 125 Commercial Refrigeration II****3 Sem Hrs**

Prerequisite: SKPT 123 and SKMA 111. Proper wiring of electrical controls and components in circuits and troubleshooting electrical problems. Credit may be earned in either SKPT 125 or CVR 1005 but not both. (45)

**SKPT 126 Air Movement and Duct Design****3 Sem Hrs**

Prerequisite: SKPT 123 or permission of department. A study of air handling for air conditioning, heating, and ventilation, including air duct design and psychometric problems of design and installation. (45) O

**SKTR 181 Machine Tool I****2 Sem Hrs**

Introduction to the industrial machine shop. Topics include: Safety, materials, hand tools, precision instruments, and purpose and operation of machine tools. (30) FW

**SKTR 182 Machine Tool Lab II****3 Sem Hrs**

Prerequisite: SKTR 181 or permission of department. Purpose of course is to expose apprentice to a variety of special machine shop operations/procedures not normally available in early stages of the apprentice's on-the-job training. (45) FW

**SKTR 183 Machinery Handbook****3 Sem Hrs**

Prerequisite: SKTR 182 and SKMA 103. This course is devoted to learning how to use and understand the Machinery Handbook. (45) F

**SKTR 260 Numerical Controls I****3 Sem Hrs**

Prerequisite: SKTR 182 and SKMA 103 or permission of department. Emphasis on manually programming machines with various capabilities. Absolute & incremental positioning systems, fixed sequential; tab sequential, work address formats; machines with two & three axis control. Advantages/disadvantages of NC machines. (45) FW

**SKTR 261 Computer Numerical Control Programming II****3 Sem Hrs**

Prerequisite: CNC 160. Advanced training in computer assisted programming methods for numerical controlled machining. Various programming languages will be taught with emphasis placed on Compact II and Encode. Computer terminals will be utilized in the application of both Compact II and Encode programming. Credit may be earned in either SKTR 261 or CNC 161 but not both. (45) W

**SKWL 101 Fuel Gas Welding and Cutting****3 Sem Hrs**

Topics include safety in use of equipment for oxy-fuel gas welding and cutting, and equipment set-up. Laboratory experience includes oxy-fuel welding of flat strips 1/8" or less in thickness, and cutting, beveling, and piercing plate and pipe. Credit may be earned in either SKWL 101 or Weld 103 but not both. (45)

**SKWL 104 Introduction to Shielded Metal Arc Welding****3 Sem Hrs**

Topics include safety indoctrination, safety in arc welding, welding terms and definitions, electrode selection, and welding joints. Laboratory includes striking an arc, running beads, pad welding, and fillet welds. Credit may be earned in either SKWL 104 or Weld 104 but not both. (45)

## Water/Wastewater Treatment Technology Courses ♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦

**WWT 110 Water Treatment****3 Sem Hrs**

A study of the processes used to produce and distribute a portable water supply for municipal and industrial use. Well fields, treatment techniques, and distribution systems are analyzed. (45-0) WE

**WWT 112 Wastewater Treatment****3 Sem Hrs**

A study of the various methods used to treat municipal and industrial wastewaters. Physical, chemical and biological methods are stressed. Collection systems and ultimate disposal or water reuse is also included. (45-0) FE

**WWT 211 Water Chemistry I****4 Sem Hrs**

Prerequisites: CHM 111 and MTH 111, or permission of instructor. A study of the gravimetric, volumetric, and colorimetric analyses utilized in the production of a potable water supply; the treatment of wastewaters; and investigations of environmental pollution. (30-75)

**WWT 240 Applied Hydraulics****3 Sem Hrs**

Prerequisite: MTH 111. A study of the mechanics of fluids. Fluids at rest and flowing in pipe systems and open channels of water distribution and wastewater systems: sewage collection systems and treatment plants are investigated. Metering and pumping are included. (45-0) O

**WWT 244 Water/Wastewater Utility  
Equipment Maintenance****3 Sem Hrs**

Prerequisite: WWT 110, WWT 112, WWT 240. Provides the student with basic knowledge of mechanical equipment and repair techniques used in both water and wastewater facilities. Shop drawings and blueprints are used during the disassembly and reassembly of a variety of mechanical devices. Pumps, valves, piping systems, and chlorination equipment are studied. (45-0)

**WWT 246 Water/Wastewater Utility  
Electrical Maintenance****2 Sem Hrs**

Prerequisite: WWT 110, WWT 112. A study of basic electricity and the instrumentation utilized in water and wastewater treatment facilities.



nominal pipe size and thickness standards, and welding joints. Included in laboratory exercises are groove welds on pipe in fixed positions. (30-90)

## Welding Courses ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦ ♦♦♦♦♦

**WELD 101 Fuel Gas Welding, Cutting, Brazing** 1 Sem Hr

Addresses safety in the use of oxy-fuel equipment, procedures, and operations. Includes the proper applications of common techniques for the joining and severing of metals. (5-15)

**WELD 103 Fuel Gas Welding and Cutting** **3 Sem Hrs**

Topics include safety in use of equipment for oxy-fuel gas welding and cutting, and equipment set-up. Laboratory experience includes oxy-fuel welding of flat strips 1/8" or less in thickness, and cutting, beveling, and piercing plate and pipe. Credit may be earned in either WELD 103 or SKWL 101 but not both. (45-0) A

**WELD 104 Introduction to Shielded Metal Arc Welding** 3 Sem Hrs

Topics include safety indoctrination, safety in arc welding, welding terms and definitions, electrode selection, and welding joints. Laboratory includes striking an arc, running beads, pad welding, and fillet welds. Credit may be earned in either WELD 104 or SKWL 104 but not both. (45-0) FW

**WELD 105 Mig Welding of Thin Gauge Steel** 1 Sem Hr

Addresses proper set-up of the Mig equipment and proper adjustment of the welding parameters. Includes the proper application of common techniques for the joining of thin gauge steel. (5-15)

**WELD 110 Math for Welders and Fabricators** **5 Sem Hrs**

Satisfies the math needs of tradespeople in the welding field. Topics covered are whole numbers, fractions, decimals, metric conversions, precision instruments, ratio and percent, algebra, applied geometry, shop trigonometry, tapers, gears, belt and chain speeds, cutting speeds and feeds, and screw threads. Credit may be earned in WELD 110 or MT 110 but not both. (75-0) WD

**WELD 111 Welding Metallurgy** 3 Sem Hrs

Covers temperature measurement by color, hardness, strengths, fatigue properties, steels, plastics, cast iron, copper, brass, bronze, aluminum, their applications with respect to wear, corrosion, and design. Credit may be earned in WELD 111 or SKMT 111 but not both. (45-0) ED

**WELD 112 Pipefitter's Handbook** **3 Sem Hrs**

**Prerequisites:** WELD 110 or MT 110. Reviews mathematical calculations including geometry and trigonometry. Includes: pipe bends, linear expansion of piping, tank capacities, leverage, methods of layout angles, pipefitting calculations, pipe welding layout, and reference tables. Credit may be earned in WELD 112 or SKPT 106 but not both. (45-0) SD

**WELD 114 Shielded Metal Arc Structural and Tank 8 Sem Hrs**

Prerequisite: WELD 104 or SKWL 104 with a C(2.0) average or better or permission of instructor. Teaches Shielded Metal Arc Welding (SMAW) safety, welding terms and definitions, welding electronics, and welding joints. Included in laboratory exercises are groove welds on plate in fixed positions. (30-90)

**WELD 220 Weld Qualification-Plate 4 Sem Hrs**

Prerequisites: WELD 115 and WELD 235 with a "C" (2.0) in each class or better or permission of instructor. Teaches welding safety, welding terms and definitions, welding electronics, and AWS welder performance testing procedures. Includes laboratory exercises e.g. qualification test groove welds on plate in fixed positions. (15-45)

**WELD 224 Shielded Metal Arc Welding Pipe 8 Sem Hrs**

Prerequisite: WELD 114 with a C(2.0) average or better or permission of instructor. Taught Shielded Metal Arc Welding (SMAW) safety,

**WELD 226 Gas Tungsten Arc Welding** 6 Sem Hrs

Discusses general safety, Gas Tungsten Arc Welding (GTAW) safety, welding terms and definitions, filler metal, electrode and gas selection, nominal pipe size and thickness standards, and welding joints. Included in laboratory exercises are starting an arc, running beads, pad welding, and groove welds on plate and pipe in fixed positions. (30-60)

**WELD 235 Gas Metal Arc Welding** 6 Sem Hrs

Discusses general safety, Gas Metal Arc Welding (GMAW) safety, welding terms and definitions, electrode and gas selection, nominal pipe size and thickness standards, and welding joints. Includes laboratory exercises in starting an arc, running beads, pad welding, and groove welds on plate and pipe in fixed positions. (30-60)



# NOTES



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# REGULATIONS

## AND

# REFERENCES

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1. Students' Rights, Responsibilities, and Conduct
2. Safety and Security Information
3. Parking and Traffic Regulations
4. Health Issues
5. Records Access and Confidentiality
6. The Delta Directory
7. Definitions of College Terms
8. Index
9. Maps



# Students' Rights, Responsibilities, and Conduct

In joining the academic community, students enjoy the right of freedom to learn and share the responsibility in exercising that freedom. Students are expected to conduct themselves in accordance with standards which are designed to perpetuate the educational purposes of the College.

The College has developed procedures and channels by which students may have a fair and objective hearing for their grievances in regard to academic evaluation, students' rights and privacy, and disciplinary action. Students have the right of protection against prejudice, capricious academic evaluation, or loss of personal rights and freedom. At the same time, however, students are responsible for maintaining standards of academic performance established for each course in which they are enrolled and for following the rules of conduct established by the College.

## Association and Expression

A. Students are free to organize and join associations to promote their common interests. In order to use College facilities and resources and to request financial assistance from the College for programming, student groups are required to register with the Vice President of Student Services' Office, submitting a statement of purpose and a current list of officers or designated representatives. Groups are also encouraged to choose a faculty or staff advisor to assist them.

B. Students and student organizations are free to examine and discuss all questions of interest to them and to express opinions publicly and privately, including their views on issues of College policy.

C. Generally, students or student organizations may distribute written material without prior approval. Hand-to-hand distribution shall be permitted in areas of public passage (commons, hallways, sidewalks, etc.), providing distribution does not interfere with normal College activity or routine. Posting and other types of distribution shall be limited to those places established by written College regulations.

D. Students and student organizations are free to invite speakers, to hear any person, and to plan programs of their own choosing subject only to those written requirements established by the College to ensure proper scheduling and use of facilities.

E. No policy, procedure, or guideline of Delta College shall discriminate on the basis of the political, social, or other opinions of students individually or collectively.

F. No record will be kept by Delta College which reflects the lawful political activities or beliefs of students, unless requested by the student in writing. Information about a student's views, beliefs, and/or political associations acquired by the faculty or other College employees in the normal course of their work will be considered confidential and will not be disclosed without the knowledge and consent of the student unless under legal compulsion.

G. Nothing in this policy shall be construed to imply approval or endorsement by Delta College of the views expressed by students or student organizations.

H. Nothing in this policy shall be construed to relieve any person of obligations under Regulations and Rules of Conduct.

## Regulations and Rules of Conduct

### I. Introduction

A. **General Responsibility:** Delta College has the responsibility to adopt and enforce rules which are consistent with Delta College goals and operations and to establish due process procedures in disciplinary cases.

B. **Authority to Establish Standards of Conduct:** Standards of conduct are established by rules of the College, as adopted by the Board of Trustees, and made known through College publications or by notices distributed or prominently posted on College Bulletin Boards; and by laws of the United States, State of Michigan and County of Bay (public laws).

Except in the case of interim or emergency rules as granted by Michigan Public Act No. 26 of 1970, such regulations shall be established and amended with the advice of the College Senate. Final authority is through either the Delta College Board of Trustees or the laws of the United States, State of Michigan, or County of Bay.

C. **Individual Responsibility:** An individual having an institutional relationship to Delta College (members of College community) is automatically placed under the rules of the College. "Institutional relationship to the College" means any connection of employment, enrollment, or service existing between any person and Delta College. As used herein, this phraseology is intended to prevent the application of these rules to purely personal or social relationships between or among students, faculty members, administration, or staff members outside the College proper. It is therefore important for all members of the College community to familiarize themselves with the rules and regulations affecting them.

D. **Effect of Violating Rules:** A member of the College community violating any of the rules of the College or a public law, on-Campus or off-Campus, at a Delta College-sponsored activity, is subject to disciplinary action by Delta College that is appropriate to the nature of the offense. Such disciplinary action will be taken in accordance with the procedures governing cases of violations as outlined in the Delta College judicial process.

E. **Reports of Violations:** Reporting of violations shall be within the province of all members of the College community, because they have a common responsibility in maintaining an orderly and efficient community for their mutual benefit. Violations may fall in one of several categories: 1. Minor offenses which are dealt with by reprimand; 2. Violations by students which are to be reported to the Office of the Vice President of Student Services; 3. Violations by faculty or staff members which are to be reported to the Office of the President; and 4. Civil or criminal violations which are to be reported to the Campus Police Department.

F. **Severance Provision:** If any of the foregoing rules or any part of any such rule shall be adjudged invalid by a court of competent jurisdiction, then such adjudication shall not affect the validity of these rules as a whole or any provision or part of any such rules not so adjudged invalid.

### II. Rules and Regulations

A. **Physical Force:** No member of the College community shall use physical force, threaten physical force, or use intimidation against any person engaged in an activity properly undertaken as part of an institutional relationship of the College except as permitted under normal law enforcement procedures.

B. **Disruption:** No member of the College community shall interfere with a College function by depriving any person of needed safety, quiet, or other physical conditions of work or study.



<p><b>C. Interference:</b> No member of the College community shall interfere with the free movement of any person engaged in an activity properly undertaken as part of an institutional relationship to the College.</p>	<p><b>N. Drugs:</b> No member of the College community shall possess, distribute, or use any prohibited drug in either the refined or crude form, nor shall any member of the College Community possess property which is used, or intended for use, as a container for any controlled substance except controlled substances for personal usage, which must be under the current prescription of a licensed physician, those specifically authorized to Delta College by federal or State authorizing agencies for educational purposes.</p>
<p><b>D. Compliance:</b> In keeping with the system of voluntary compliance that underlies the College Regulations and Rules of Conduct, no member of the College community shall fail to follow the reasonable instructions given by an appropriate College official to cease specified conduct, if such conduct threatens disruption or interference with the rights of others, College discipline, College functions, and/or order in the College community.</p>	<p><b>O. Smoking Policy:</b> In the interest of providing a safe and healthy environment, all Delta College buildings are smoke-free. This action is in accordance with the Michigan Clean Indoor Act, Pt. 126 of the Public Health Code P.A. 368 or 1978.</p>
<p><b>E. Identification:</b> No member of the College community shall refuse to provide identification when requested to do so by an identified employee of the College.</p>	<p><b>P. Selling, Soliciting, and Distributing:</b> Any person who wishes to distribute, solicit, or sell information, materials, goods, or services not within the normal College activities and routine, must have the written permission of the Vice President of Student Services or the Vice President of Business and Finance or their designee.</p>
<p><b>F. Forbidden Occupation:</b> No member of the College community shall, subsequent to reasonable notice to leave given by the College President or the authorized designee, continue occupation of any College facility or property which is under the direct control or responsibility of the College, especially if such occupation interferes with a College function or risks injury to a person or property.</p>	<p><b>Q. Animals:</b> People may not bring animals on Campus or into College buildings. Leader dogs and animals used for educational purposes are exceptions; however, all animals must remain under the control of their owners and be properly licensed and medically treated as required by law.</p>
<p><b>G. Facility Entry and Usage:</b> No member of the College community shall gain or attempt to gain unauthorized entry to or make unauthorized use of the College facilities or property.</p>	<p><b>R. Federal, State, and Local Laws:</b> Violations of Federal, State, or local laws on-Campus, or off-Campus in connection with College-sponsored activities shall constitute violations of College rules.</p>
<p><b>H. Property:</b> No member of the College community shall damage, deface, destroy, steal, or misappropriate the property of the College, any member of the College community, or any visitor to the College Campus.</p>	<p><b>S. Plagiarism and Honesty in Academic Work:</b> See Section IV, Academic Policies and Information.</p>
<p><b>I. Unauthorized use of College Credit, Property, Etc.:</b> No unauthorized member of the College community shall use the College telephones, postal machines and meters, duplicating machines, computer, motor vehicles, or other equipment where the unauthorized use of such results in the incurring of charges by the College. This provision shall be deemed to also include College billing, charging, and credit card numbers utilized for communications or transportation purposes. Further it shall be a violation for any member of the College community who has not been issued a key by the College to possess or use College keys for any purpose whatsoever.</p>	<p><b>Questions regarding the rights and responsibilities of Delta College students and guests should be addressed to the Office of the Vice President of Student Services, phone 686-9339.</b></p>
<p><b>J. Counterfeiting, Altering, and Copying:</b> No member of the College community, with intent to injure or defraud, shall falsely make, forge, manufacture, print, reproduce, copy, tamper with, or alter any writing, document, record, or identification used or maintained by the College or by members of the College community.</p> <p>No member of the College community shall knowingly possess, display, or cause or permit to be displayed any writing, record, document, or identification form used or maintained by the College or by members of the College community, knowing the same to be fictitious, altered, forged, counterfeited, or made without authority.</p>	<p><b>Posting Policy</b></p> <p>Students wishing to post advertisements (sale items, spring break trip posters, lost and found, etc.) are required to take such advertisements to the Office of the Campus Life Specialist located in A-58. All advertisements will be posted for a maximum of 30 days and will be removed the last working day of every month. Advertisements are limited to 25 pieces of material and must be distributed accordingly throughout the designated posting areas. Metal strips in the East and West Halls (Main Building) are reserved specifically for Delta College-related materials.</p> <p><b>Areas of Posting:</b></p> <p>Advertisements may be posted in the following locations:</p> <ul style="list-style-type: none"> <li>• The bulletin boards in the South Hall (South entrance of Delta College)</li> <li>• The bulletin boards in the East and West Halls (Main Building)</li> <li>• The bulletin board in the Fine Arts Building (S Building)</li> <li>• The bulletin board in the Allied Health Building (F wing)</li> <li>• The bulletin board in the Delta Commons</li> </ul> <p>Student advertisements posted in any other location will be removed.</p> <p><b>Exceptions:</b> An exception to the above will be approved during the two weeks preceding a Student Senate election, when candidates for Student Senator will be allowed to post election material throughout the College. Materials must be removed the day following the election. Other exceptions will be at the discretion and approval of the Vice President of Student Services.</p>
<p><b>K. Confidentiality of College Records:</b> No person shall inspect, investigate, or use College files (i.e., counseling, financial aid, placement, records, registration) without proper College authorization.</p>	
<p><b>L. Firearms and other Dangerous Materials:</b> The possession or use of firearms, firecrackers, explosives, toxic or dangerous chemicals, or other lethal weapons, equipment, or material is not permitted on College property (including College housing) at any time except when specifically authorized by the College for educational purposes or when firearms used for recreational purposes and transported through the Campus meet the regulations of the Campus Police Department.</p>	
<p><b>M. Alcoholic Beverages:</b> No member of the College community shall possess or consume beer, wine, or other alcoholic beverages on College property, or any property which is under the direct control or responsibility of the College, excluding Residence Halls, in which case regulation of such shall be the responsibility of the Vice President for Student Services. This regulation shall not apply to the President's home and the Higgins Lake Cottage. This rule may be suspended from time to time by authorization of the President.</p>	



## Student Complaint and Hearing Process

Every effort will be made to first resolve conflicts through informal discussions with the involved parties. If this fails, a written complaint may be filed as follows:

### A. Complaint

1. A complaint alleging violations of a College rule and/or regulation may be filed in writing against any student through the Campus Police Department on a State of Michigan Standard Incident Report Form, UD-107. Complaints must be filed within a reasonable length of time. This report shall then be forwarded to the Office of the Vice President of Student Services for action.
2. After consultation with the student involved and after undertaking other investigations that may be appropriate under the circumstances, the Vice President of Student Services or designee shall take one of the following actions:
  - a. Dismiss the complaint.
  - b. Conduct an informal hearing and invoke a sanction if the alleged violation is admitted.
  - c. Refer to a Case Review Officer selected from a list prepared by September 1 each year by the Office of the President and named within three working days of the receipt of the complaint, barring unforeseen circumstances.
3. The action taken by the Office of the Vice President of Student Services will be communicated to the student in writing.

### B. Case Review

Purpose: To consider complaints referred by the Office of the Vice President of Student Services and to recommend appropriate action to be taken by the Office of the Vice President of Student Services.

1. The Case Review Officer will conduct a case review, normally including discussion with all parties involved, prepare a written report, and recommend that one of the following actions be taken by the Office of the Vice President of Student Services:
  - a. Dismiss the complaint.
  - b. Invoke a specific sanction.
  - c. Activate the Formal Hearing Panel.
2. The Case Review Officer will make a recommendation within five working days of receiving the complaint, barring extenuating circumstances.
3. Action by the Office of the Vice President of Student Services shall be communicated to students in writing.

### C. Formal Hearing Panel

1. Members of the Formal Hearing Panel shall serve for one year (September 1 through August 31 of the following year) and include:
  - a. A non-voting chair designated by the Office of the Vice President of Student Services who has not previously ruled on the case.
  - b. Three students selected by the Student Senate Committee.
  - c. One faculty selected by the Faculty Executive Committee.
  - d. One staff member selected by the Senate President.
  - e. A sufficient number of alternates shall be designated to assure full panel representation when a hearing is scheduled.
2. The Formal Hearing may be requested:
  - a. By the student filing a written request with the Office of the Vice President of Student Services within five working days following notification of the action taken or
  - b. By the Office of the Vice President of Student Services.

3. Within 10 working days of the receipt of a written request for a formal hearing, the Office of the Vice President of Student Services shall convene the Hearing Panel.

4. The Formal Hearing Panel will review all previous actions and conduct a formal hearing. Within 8 working days, barring extenuating circumstances, the Panel shall make a ruling specifying its findings.

Such ruling may result in:

- a. Confirmation of the action of the Office of the Vice President of Student Services.
  - b. Dismissal of all or a portion of the complaint.
  - c. Instructions to the Office of the Vice President of Student Services to invoke a specific sanction or initiate other disposition as the Hearing Panel deems appropriate under the circumstances.
5. The decision of the Hearing Panel shall be final except that action involving suspension or dismissal from the College must be ratified by the Office of the President before implementation.

## Code of Responsible Computer Usage

Delta College encourages students, faculty, and staff to utilize institutional computing facilities for legitimate educational purposes. The following code of conduct for computer usage should be followed at all times.

1. Each account owner and workstation user is solely responsible for the usage incurred through her/his account/workstation. Computer access is granted to an individual and may not be transferred to, or shared with, another person without authorization from the Director of Computer Services or the appropriate system administrator.
2. All users must respect the privacy and usage privileges of others.
3. All users must respect the integrity of computing systems and networks both on campus and through external connections. Users shall not attempt to infiltrate or alter the hardware or software components of a computing system or network.
4. All users of Delta's external network connections shall comply with the "Acceptable Use" policies established by the external networks' governing bodies. In cases of doubt, users bear the burden of responsibility to inquire concerning the permissibility of external network uses prior to execution. Such questions should be directed to Delta College's Director of Computer Services.
5. All users must respect the legal protection provided by copyright and license to programs and data. Users are responsible to comply with the license and copyright provisions of the software they use.
6. Each user shall observe the classroom or computer lab policies and procedures. Users are expected to comply with the instructions of support staff in the computer labs and Computer Services staff. In particular, users will vacate workstations or the facility and will surrender other resources (such as printers and software) promptly when asked to do so both at closing times and when necessary to permit access by others.
7. Violations of the above may lead to any of the following:
  - a. Termination of a program or online sessions
  - b. Reduction of allocations or restrictions of account privileges
  - c. Invalidation of an account I.D.
  - d. Disciplinary action by the appropriate faculty member, administrator, dean, supervisor, or manager



# Safety and Security Information

## Law Enforcement on the Campus

The Delta College Campus Police Department is primarily responsible for providing safety and security services, enforcing traffic and parking regulations, and conducting criminal and accident investigations. The Department is located in the Main Building, B-102, across from the East Main Entrance. The Campus Police Department is open 24 hours a day, 7 days a week excluding holidays, at which time officers of the Department are dispatched through Bay County Central Dispatch, for emergencies **only**.

The police officers of the Campus Police Department are deputized through the Bay County Sheriff Department and as such, have full police and arrest powers on Campus. These police officers are trained in the same manner as all other law enforcement officers in the State of Michigan and are certified as such through the Michigan Law Enforcement Officers Training Council. The officers also receive training in basic first aid and personal safety. The Campus Police Department maintains a close working relationship with federal, State, county, and other local law enforcement agencies and appropriate elements of the criminal justice system.

## Reporting of Criminal Activities or Emergencies

To report a crime or an emergency, you should call the Delta College Campus Police Department at 686-9111 or for inter-College calls, dial Ext. 9111. A crime or emergency which occurs off-Campus should be reported to the police department having legal jurisdiction for that area. If you are unsure which department has jurisdiction, call 686-9112.

The Campus Police Department maintains two-way radio contact with Bay County Central Dispatch, providing access to assistance and support from the Bay County Sheriff Department, the Michigan State Police, Saginaw Valley State University Police Department, the Frankenlust Township Fire Department, Bay Medical Ambulance, and the Delta College Physical Plant Department.

## Maintenance and Security of Campus Facilities

Delta College maintains a very strong commitment to Campus safety and security. Every effort is made to ensure that the Campus facilities, buildings, and grounds are maintained in such a manner as to promote safety and reduce criminal opportunity.

Exterior lighting is a very important part of this commitment. The College attempts to maintain adequate exterior lighting in parking lots as well as on the pedestrian walkways. Members of the College community are encouraged to report any exterior lighting deficiencies to the Campus Police Department or the Physical Plant Department. Written surveys of exterior lighting are taken by the officers of the Campus Police Department or by Physical Plant employees on a monthly basis.

Exterior doors on Campus buildings are locked and secured each evening by Campus Police personnel. Physical Plant personnel are responsible for the unlocking and opening of these exterior doors. Door and security hardware operating problems are also reported by these personnel on a daily basis. Problems in exterior door locking mechanisms should also be reported to the Campus Police or Physical Plant Departments.

Parking lots on Campus are actively patrolled by Campus Police officers and the Department also has a variety of alarms (including fire, intrusion, hold-up and trouble) to assist the officers in patrolling and monitoring the Campus.

## Security Awareness and Crime Prevention Programs

It is the intent and desire of Delta College to prevent crimes rather than react to them after the fact. Delta College's crime prevention program is based upon the dual concepts of eliminating or minimizing criminal opportunities, wherever and whenever possible, and encouraging students and employees to be responsible for their own safety and security, as well as that of others. This program is accomplished in the following manner:

1. New Student Orientation: A crime prevention presentation accompanied by a brochure handout is made available to new students at Orientation.
2. New Employee Orientation: A crime prevention presentation accompanied by a brochure is made available to new employees being oriented to Delta College during each Fall Semester.
3. Crime Awareness/Prevention Presentations: Crime prevention presentations are made annually to various Campus groups.
4. Closed-Circuit Television Surveillance: Closed-circuit television cameras monitored by the Campus Police survey several restricted areas.
5. Escort Service: An escort service is available for the safety of students and employees (there may be times, however, when an officer is not immediately available for this service). Students, faculty, and staff are encouraged, for their own safety, to walk in groups and not to accept escorts from strangers.
6. Printed Crime Prevention Materials: Crime prevention brochures and posters related to crime awareness/prevention measures are distributed and displayed.
7. Security and Facilities Surveys: Surveys of exterior lighting, exterior doors, and grounds are conducted by the Campus Police Department/Physical Plant Department to promote and enhance safety and security.
8. Operation Identification: The engraving of social security numbers or owner-recognized numbers on items of value is strongly promoted and available at no cost to students, faculty, and staff.
9. Crime Prevention Publicity: Prevention articles and material are routinely published in the student newspaper, in the weekly bulletin and in the faculty/staff newsletter. This material is also on display in the showcase located in the hallway outside the Campus Police Department.
10. Campus Update: A monthly listing of on-Campus criminal activities and statistics is displayed in the Department showcase.
11. Special Alerts: If circumstances warrant, special printed crime alerts can be prepared and distributed either selectively or throughout the Campus. Because no campus is isolated from crime, the key to preventing crime is awareness, which is best achieved through education.
12. Patrols: Officers of the Delta College Police Department perform routine patrols of the campus both on foot and in the car. In addition, a bicycle patrol, was recently instituted, which allows for a more personal and individualized contact with officers of the department.
13. Sexual Offense Awareness/Prevention Programs: Sexual Assault Awareness/Prevention Programs are made available throughout the year to members of the college community; which may include training sessions, brochures, posters/flyers, bulletin boards, and information in the news media, along with material covering this subject during the Orientation program.

This information is being provided to you as part of Delta College's commitment to your safety and security on its Campus and in compliance with the Crime Awareness and Campus Security Act of 1990.



**REMEMBER:** Don't shower, bathe, douche, change clothes or straighten up the area where assault occurred. You will destroy evidence you may need! Report it to the police! You will have the option of being assisted by campus authorities in notifying law enforcement authorities if a sex offense has occurred.

Allegations of Criminal Sexual Conduct committed by members of the College community, will be handled through the College's Judicial Process Article. Such persons may also be subject to criminal prosecution or other legal action in the court system.

In addition to imposition of disciplinary sanctions under College procedures, (which could include suspension or expulsion from the College and/or termination from employment) prosecution under state and federal laws, (which could include fines and/or imprisonment) is also possible.

#### **In investigating and hearing cases of alleged sexual assault:**

- 1) The accuser and the accused shall be entitled to the same opportunities to have others present during a disciplinary proceeding; and
- 2) Both the accuser and the accused shall be informed of the outcome of any College disciplinary proceedings.

Victims of sexual offenses are encouraged to receive confidential assistance, on-campus, from Health Services (Room B-102), at 686-9333, or the Counseling Center (Room K-130) at 686-9330. For off-campus assistance contact your local Crisis Intervention Center.

Victims have the right to choose counseling, medical treatment, prosecution and the reporting of their case, through the Delta College Judicial system and/or the off-campus court system, as well as the right to refuse all of the above without reproach from any College personnel.

This information is being provided to you as part of Delta College's commitment to your safety and security on its Campus and in compliance with the Crime Awareness and Campus Security Act of 1990.

## **Crime Statistics**

Delta College believes that an informed public is a safety-conscious public. The following statistics, provided in compliance with the Crime Awareness and Campus Security Act of 1990, are for your information. A written request for crime statistics involving major off-Campus sites has been made to the police agencies having jurisdiction over each off-Campus site. Any crime statistics for these sites, which have been included in these statistics, reflect only those offenses which have been brought to our attention.

These offenses do **not** include "assists" to outside law enforcement agencies.

<b>REPORTS:</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>
Murder	0	0	0
Criminal Sexual Conduct	0	0	0
Criminal Sexual Contact	0	1	0
Robbery	0	0	1
Aggravated Assault	1	0	0
Breaking & Entering	2	2	3
Auto Theft	1	0	1

The following are arrest statistics for three offense categories for 1992 and the preceding two years. These statistics do **not** include arrests taken through the College's judicial process.

<b>ARRESTS:</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>
Liquor	0	1	6
Drugs	1	0	4
Weapons	0	0	0

## **Sexual Harassment**

Sexual harassment is unwelcome sexual advances, requests for sexual favors, and other conduct or communication of a sexual nature when:

- Submission to such conduct or communication is made a term or condition, either explicitly or implicitly, of a student's employment or education.
- Submission or rejection of such conduct is used as a basis for employment or academic decisions.
- Such conduct substantially interferes with a student's employment or education, or creates a hostile, offensive employment or educational environment.

Basically, sexual harassment is when someone makes you think you'll get in trouble, lose your job, get a bad grade, or be denied a service unless you give in to sexual advances or put up with sexual remarks or actions.

#### **What Can I Do About Sexual Harassment?**

First, be sure that the harasser knows you do not welcome this conduct or communication. State your objections clearly when it first begins! Don't just hope the problem will go away.

If the harassment continues, don't keep it to yourself. Take your complaint to either the Affirmative Action Officer, who is located in A-2, or to the Vice President of Student Services in A-119. Informal complaints are handled confidentially and may be resolved quickly. Talk to other students or coworkers and see if they observe what is happening to you. Ask if they have had similar problems with your harasser. Keep notes on when your problem occurred and what you said or did. This information will assist the College in handling your complaint.

## **Access to Campus Facilities**

Campus buildings and facilities are accessible to students, faculty, staff, guests, and visitors during normal hours of business Mondays through Fridays, and for limited designated hours on Saturdays and Sundays (this excludes most holidays). The exterior doors to the Campus buildings are generally open and allow access between 7 a.m. and 10 p.m.



# Parking and Traffic Regulations

## Parking Regulations

All individuals using a motor vehicle on Delta College property are expected to comply with College and/or State rules, regulations, and laws pertaining to parking, traffic, and vehicle use on College property. Violations of College parking rules and regulations will result in a parking ticket which will result in fines and penalties ranging from \$10 to having the vehicle towed away at the owner's expense. Operators in violation of State law provisions applicable to the Campus will be issued a traffic citation complaint, which will require the violator to appear in 74th District Court in Bay City.

### Sec. 1 - Parking

The College has provided adequate parking space for all students, faculty, staff, and visitors. All vehicles which enter the property of Delta College are expected to comply with the College regulations pertaining to parking and traffic. Failure to comply with these regulations will result in Violation Notices being issued by an officer of the Campus Police Department.

### Sec. 2 - Towing

The College maintains its right to tow any vehicle illegally parked on the Campus without warning at the expense of the owner.

### Sec. 3 - Obstructing Traffic

Any vehicle parked on the Campus in such a manner as to obstruct the free flow of traffic or endanger the safety of the public shall be in violation of this regulation. Vehicle will be towed at owner's expense.

### Sec. 4 - Abandoned Vehicle

Any motor vehicle left on the Campus for more than five consecutive days without being moved, and the owner/driver has not notified the Campus Police Department that the vehicle will not be moved, shall be deemed abandoned. Any vehicle parked on the Campus without current license plates attached shall also be deemed abandoned. Vehicles will be towed at owner's expense.

In an effort to control long term parking, the College requires the owner/driver of any vehicle which will be left parked for an extended period of time (more than five consecutive days without being moved) to report the necessary information to the Campus Police Department immediately.

### Sec. 5 - Parking on Delta College Property

No person shall park, except when necessary to avoid conflict with other traffic or in compliance with law or directions of a police officer or traffic control device, in any of the following places:

- 5.01: At any place or location where official signs prohibit parking or stopping, including but not limited to posted Fire and Emergency Lanes, Bus Stop Zones, and Loading and Unloading Zones.
- 5.02: At any place or location where official signs designate such parking for specific use of handicapped persons, motor-driven cycles, or bicycles.
- 5.03: On any sidewalk located on the Delta College Campus.
- 5.04: Within 15 feet of any fire hydrant.
- 5.05: Upon the curb, grass, land islands, traffic islands, or median strips.
- 5.06: In reserved parking lots without proper authorization.
- 5.07: On the highway side of any vehicle stopped or parked at the edge or curb of a street.
- 5.08: Within any intersection, or blocking any public or private driveway.
- 5.09: On any street or roadway, or the shoulder of any street or roadway on the Delta College Campus.
- 5.10: In such manner as to prevent other vehicles from using legitimate parking spaces; i.e., straddling parking lanes, parked in two spaces, parked parallel to curb, or backed into parking space.

### Sec. 6 - Car Pool Parking

In an effort to assist students, a special Car Pooling Area, located in the East Parking Lot, has been established. Permits for car pooling are obtained from the Campus Police Department. To obtain a permit, there must be three or more riders in a car at least three days a week. Parking in this special area is strictly enforced every day. A violation will result in a \$10 ticket; a second violation will result in the vehicle being towed at the owner's expense.

### Sec. 7 - Fines and Penalties

All fines will double if not paid or an appeal is not filed with the Campus Police Department within 21 days after receipt of a ticket. Once a ticket is put on hold after the 21-day period, a service charge of \$2 will then be added. This would increase an original \$10 parking ticket to \$22. Also, after the 21-day period, all transcripts are placed on hold and will not be released until the fine is paid. Any outstanding parking fines that are not paid by the end of the semester will also result in the student not being able to register for the next semester.

### Sec. 8 - Appeals

All requests for appeal of parking tickets should be directed to the Campus Police Department. An appeal form must be completed and returned to the Department. The Parking Appeal Board will meet at regular intervals to review appeals and complaints. The Board may either uphold the fine, dismiss the case, order the release of holds placed on transcripts, or allow registration for classes in accordance with these regulations. The Board shall also send written notices to individuals with fines outstanding, advising them of the penalties. The Board will also review and recommend changes in these regulations. The College reserves the right to make any necessary revisions to these regulations at any time, providing a two-week notice is published in the student and staff bulletins prior to becoming effective.

### Sec. 9 - Handicapped Parking

The Campus has limited spaces reserved for handicapped drivers. Spaces are assigned on a semester basis. Persons may apply at the Office of Disabled Student Services (B-116). A doctor's letter describing the severity of handicap is required.



## Traffic Regulations

Report all accidents to the Campus Police Department, whether they occur in the parking lots or on the roadways. A state accident form will be filled out as required. Most accidents occur in the parking lots while attempting to park your car or upon backing out of a parking space. Use care in parking and obeying traffic rules and regulations.

**Note:** Copies of accident reports will be furnished to insurance companies upon written request and payment of the required fee.

### Sec. 1 - College Regulation

As a condition of the use of College roads and parking facilities, all vehicles on Delta College property shall be operated in a safe and courteous manner in obedience of all applicable State laws, all posted traffic signs, and directions of Campus Police officers.

All persons operating a vehicle on this Campus must show proper operator's license, registration, and proof of insurance when requested by Campus Police officers or other law enforcement officers.

### Sec. 2 - State Law

Delta College Campus Police officers, as deputy sheriffs of Bay County, as well as other State law enforcement officials, have authority to enforce those provisions of State law applicable to the Campus. Operators in violation of such provisions can be issued a traffic citation, which will require the violator to appear in 74th District Court in Bay City.

Applicable provisions include:

### OFFENSE

	MI State Law
Failure to stop after PL accident	257.617
Failure to stop after PD accident	257.618
Driving under influence of liquor or drugs	257.625
Driving while impaired	257.625a
Careless driving	257.626b
Drag racing	257.626a
Failure to stop leaving private drive	257.652
Manslaughter	750.324
Negligent homicide	750.325
Reckless driving	257.626

Conviction of certain of these offenses may result in points being added to your driving record.

### Sec. 3 - Penalties

Members of the Delta College community who are in violation of the above Sections 1 and 2, whether or not issued a citation under State law, shall also be subject to disciplinary action under the College judicial process.

## Health Issues

### Drug & Alcohol Guidelines and Resources

The following information is provided in compliance with the Drug Free School and Communities Act Amendments of 1989 Public Law 101-226.

**Alcoholic Beverages:** No member of the College community will possess or consume beer, wine, or other alcoholic beverages on College property, or any property which is under the direct control or responsibility of the College, unless a specific College-approved function permitting alcohol consumption has been authorized by the Office of the President.

**Drugs:** No member of the College community will manufacture, possess, distribute or use any prohibited drug in either the refined or crude form, nor will any member of the College community possess property which is used or intended for use as a container for any controlled substance except controlled substances for personal usage, and these must be under the current prescription of a licensed physician, or those specifically authorized to Delta College by federal or State authorizing agencies for educational purposes.

**Violations may fall into one of several categories:** 1. Minor offenses which are dealt with by reprimand; 2. Violations by students which are to be reported to the Office of the Vice President of Student Services; 3. Violations by faculty or staff members which are to be reported to the Office of the President; and 4. Civil or criminal violations which are to be reported to the Campus Police Department.

**Severance Provisions:** If any of the foregoing rules or any part of any such rule will be adjudged invalid by a court of competent jurisdiction, then such adjudication will not affect the validity of these rules as a whole or any provision or part of any such rules not so adjudged invalid.

**Effect of Violating Rules:** A member of the College community violating any of the rules of the College or a public law, on-Campus or off-Campus, at a Delta College-sponsored activity, is subject to disciplinary action by Delta college that is appropriate to the nature of the offense. Such disciplinary action will be taken in accordance with the procedures governing cases of violations as outlined in the Delta College judicial process.

**Reports of Violations:** Reporting of violations will be within the province of all members of the College community, because they have a common responsibility in maintaining an orderly and efficient community for their mutual benefit.

### Health Risks

**Abusing drugs or alcohol can:** make you sick; lower your job performance; put you in prison; cause dependency; be expensive; **kill you!**

**Alcohol use will:** dull your senses; impair coordination; slur your speech; cause mood changes; depress brain functions; damage liver, heart, and pancreas; irritate your stomach; cause physical damage to your unborn baby; lead to irreversible brain damage.

**Drug use will:** increase your heart rate and blood pressure; cause tremors and convulsions; produce heart, liver, and kidney damage; injure your unborn baby; lower your resistance to disease-AIDS; cause personality changes, confusion, depression; lead to paranoia and hallucinations; **kill you!**



Contact any of the following free Campus resources. All inquiries and assistance are confidential.

<b>Counseling Center (K-130)</b>	686-9330
Professional counselors available to assist during a crisis or by appointment.	
<b>Health Services (B-102)</b>	686-9333
Medical care, referrals, brochures.	
<b>Peer Listeners (H-138)</b>	686-9317
Trained student volunteers who offer individual advice and referrals in an informational setting.	
<b>Campus Ministry (H-144)</b>	686-9265
Non-judgmental, personal support for anyone wanting help with problems.	
<b>Student Support Services (H-137)</b>	686-9010
Substance abuse prevention workshops, seminars, and community activities sponsored by the Governor's Initiative Against Drug and Alcohol Abuse Grant.	
<b>Human Resources Office (H-123)</b>	686-9107
LIFE (Lifeline Information for Employees) program offering a confidential counseling and referral system for employees.	

#### Community Resources include:

##### SAGINAW

AA 24-Hour Help Line	793-9093
Pathways, Saginaw Community Hospital	790-2272
Insight International	755-2173
DOT Caring Center	790-3366
Insight, The Recovery People	754-2301
Substance Abuse Services	755-0959

##### MIDLAND

AA	695-2975
Comprehensive Drug Service	835-7109
Alcohol Services of Midland County	832-6860

##### BAY CITY

AA	895-9136
Bay Haven	894-3799
Riverside Center	894-2991

<b>National Drug Abuse Hotline</b>	<b>1-800-662-HELP</b>
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## Transmissible Diseases

- Delta College will provide for students, faculty, staff, and local residents, educational information concerning Acquired Immunodeficiency Syndrome (AIDS). Information about symptoms, known means of transmission, and precautions for avoiding or reducing the risks is given on a periodic basis.
- In response to AIDS inquiries which concern students or employees, no specific or detailed information concerning complaints or diagnosis will be provided to faculty, administrators, or parents without the expressed written permission of the individual in each case. It should be noted, however, that every possible effort will be made to address inquiries by explaining the extent of the College's educational programming and health safeguards concerning AIDS.
- Acquired Immunodeficiency Syndrome has been included as part of Section 504 of the Rehabilitation Act (1973) which states that no individual shall be discriminated against solely by reason of his or her handicap.
- The Infection Control Committee is helping Delta comply with the OSHA regulations for bloodborne pathogens.

Factors to be considered include:

The College Director of Health Services and the Director of the County Health Department, along with any other persons needing to be involved, will determine if a student has a transmissible disease, and if so:

- The possible consequences to fellow students and other members of the College community.
  - The risks to the infected student's personal health from remaining in the Campus environment.
- The Director of Health Services will notify the appropriate County Health Department of all cases of Hepatitis B, positive HIV, and other diseases required to be reported under State or federal law.

- The Director of Health Services will establish procedures to reduce the frequency of needlesticks and exposure to human blood, blood products, or mucous secretions in order to reduce the risk of transmission of infectious agents.
  - All clinic instruments which contact a person's blood or mucous membranes must be appropriately cleansed, disinfected, or sterilized between uses and, if disposable, placed in a labeled container designed for such a purpose.
  - All needlesticks must be immediately reported to the proper supervisor for further evaluation.
  - Students receiving accidental needlesticks in the classroom should report the incident immediately to their instructors. Faculty and staff receiving accidental needlesticks in the performance of their work should report the incidents immediately to their supervisors.
  - All Health Services staff shall be educated with respect to the transmissibility of infectious diseases such as Hepatitis B and HIV.
  - Health Services shall use disposable needles and lancets which will be properly disposed of immediately after use.
- Health Services will make information available concerning where testing for Hepatitis B virus, HIV antibodies, and other transmissible diseases can be received.
- Health Counseling will be made available either with the College Director of Health Services or the County Health Department.
- Health Services will observe strict confidentiality of all medical records so that no specific or detailed information concerning complaints or diagnosis be provided to faculty, administrators, or parents, without the expressed written permission of the patient. That position is supported by the amendment to the Family Education Rights and Privacy Act of 1974.
- This statement will be periodically reviewed in light of the most recent medical knowledge concerning specific diseases to which it is applicable.



# Records Access and Confidentiality

## Access to and Confidentiality of Student Records

Each year the College informs students of the Family Educational Rights and Privacy Act of 1974 as amended. This Act is to protect the privacy of educational records, to establish the right of students to inspect and review their educational records, and to provide guidelines for the correction of inaccurate or misleading data through informal or formal hearings.

No one outside the institution shall have access to nor will the institution disclose any information, **other than Directory Information**, from students' educational records without the written consent of students except to qualified personnel within the institution, to officials of other institutions in which students seek to enroll, to persons or organizations providing student financial aid, to accrediting agencies carrying out their accreditation function, to persons in compliance with a judicial order, and to persons in an emergency in order to protect the health or safety of students or other persons. All these exceptions are permitted under the Act.

Within the Delta College community, only those members, individually or collectively, acting in the educational interests of students are allowed access to student educational records. These members include personnel in the Offices of Records and Registration, Admissions, Financial Aid, and Counseling, and academic personnel within the limitations of their need to know.

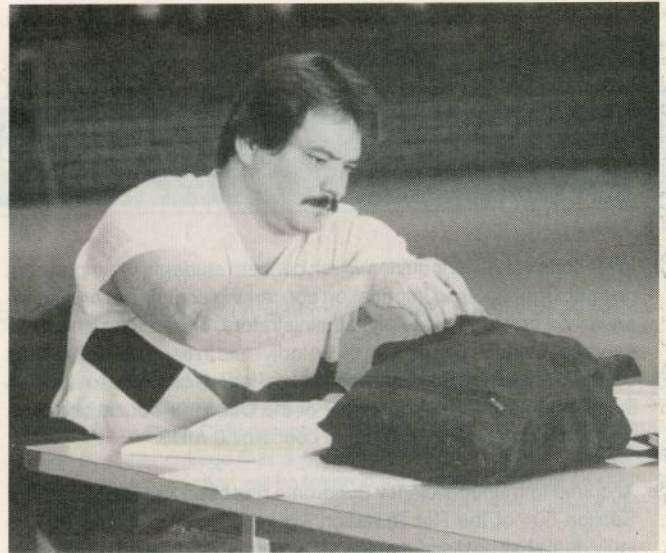
At its discretion the institution may provide **Directory Information** in accordance with the provisions of the Act to include: student name, verification of address, enrollment status, dates of attendance, degrees/certificates and awards conferred including dates, curriculum, participation in officially recognized activities and sports, and weight and height of members of athletic teams. Upon the publication of this notice, you are advised of the information which the College may release. Students may withhold Directory Information by notifying the Director of Records in writing. Request for non-disclosure will be honored by Delta College for only one academic semester at a time; therefore, requests to withhold Directory Information must be filed with the Director of Records one week prior to each semester.

The law provides students with the right to inspect and review all information contained in their educational records, to challenge the contents of their educational records, to have a hearing if the outcome of the challenge is unsatisfactory, and to submit explanatory statements for inclusion in their files if they find the decisions of the hearing panels unacceptable.

Delta College will permit persons who are or have been in attendance at the College to inspect and review their educational records. Students wishing to review their educational records must make written requests to the appropriate department listing the item or items of interest. Only records covered by the Act will be made available within 15 working days of the receipt date of the request.

Students may not inspect and review the following as outlined by the Act: financial information submitted by their parents; confidential letters and recommendations associated with admissions, employment, job placement, or honors to which they have waived their rights of inspection and review; or educational records containing information about more than one student, in which case the institution will permit access only to the part of the record which pertains to the inquiring student. The institution is not required to permit students to inspect and review confidential letters and recommendations placed in their files prior to January 1, 1975, provided these letters were collected under established policies of confidentiality and were used only for the purpose for which they were collected.

Students who believe that their educational records contain information that is inaccurate or misleading or is otherwise in violation of their privacy or other rights, may discuss their problems informally with the persons in charge of the records involved. If these persons agree with the students, the appropriate records will be amended. If not, the students will be notified within a reasonable period of time that the records will not be amended and will also be informed of their right to a formal hearing by the Vice President of Student Services.



*"I Decided on Delta!"*

*"I'm a member of the People on Wheels (POW) group on campus. Delta continues to make things more accessible for me and others with disabilities. Everyone here has treated me well and helped me get all the classes I need."*

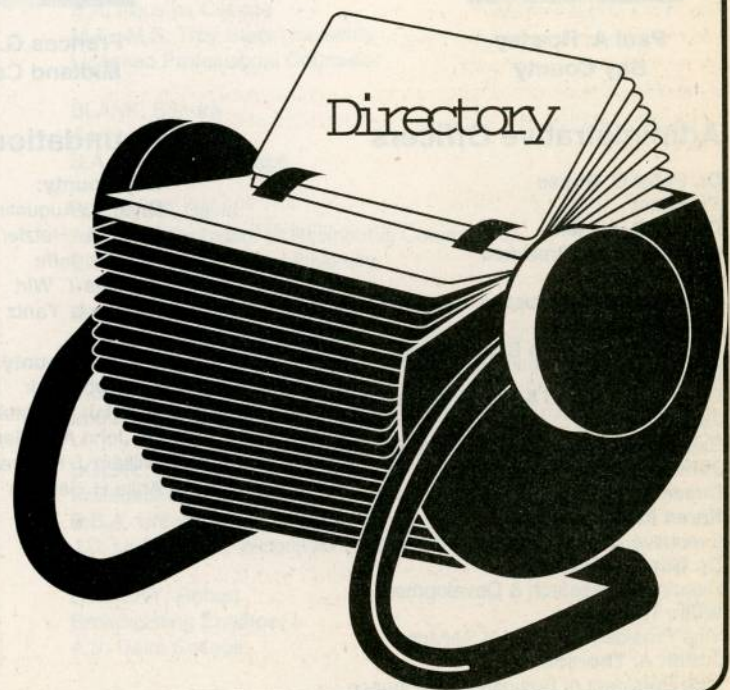
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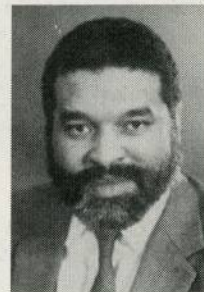
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# Full-Time Faculty, Administrators, Professional, and Technical Staff

ABBS, Kristin  
Biology Lab Technician  
B.S. Saginaw Valley State University

ACKERMAN, Franklyn  
Electrical Supervisor

ADAMS, Richard  
Programmer/Analyst  
A.B.S.; A.A. Delta College

AIKEN, George  
Corporate Services Instructor  
B.S. Kean College

ALBRETSEN, Ray  
Corporate Services Quality Education Instructor  
A.A.; A.S. Delta College

ALLEN, Barbara  
Professor of Mathematics and Computer Science  
B.S.; M.S. Michigan State University

ALLEN, Timothy  
Assistant Professor of Mathematics and Computer Science  
B.S. Central Michigan University  
M.A. Wright State University

ALTENHOF, Carl  
Associate Professor of Biology  
B.S. California State College  
M.S. University of Michigan

APPOLD, Tim  
Corporate Services Instructor  
Certified Welding Specialist, Delta College

ARMAN, Harold (Dr.)  
Assistant to the President  
B.S.; M.A. Western Michigan University  
Ph.D. Michigan State University

ARNDT, Robert  
Assistant Professor of Psychology  
B.S. Carrol College  
M.A. Bradley University

AUGUSTINE, John  
Associate Professor of English  
B.A. University of Michigan  
M.A. New York University

AULT, Robert  
Corporate Services Manager Welding Services

AULT, Suzanne  
Assistant Director of Human Resources  
B.A. Michigan State University

AZZOPARDI, Richard  
Welding Service Instructor, I.E.C.

BALASH, Terence  
General Services Manager  
B.B.A. Saginaw Valley State University  
M.B.A. Wright State University

BALTEN, J. James, Jr.  
Facility Manager - International Center

BARNES, J. Neal  
Corporate Services Instructor  
B.G.S. Texas Tech University  
A.S. South Plains College

BEANE, Rose Margaret (Dr.)  
Special Populations Outreach Specialist/Assessment Specialist  
B.S. Wayne State University  
M.Ed. Saginaw Valley State University  
Ph.D. Michigan State University

BECKER, Jon  
Communications Specialist  
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B.A. Central Michigan University

BEGEMAN, Theodore  
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B.S. Michigan State University  
M.S. University of Wisconsin - Stout

BEINS, Craig  
Director of Law Enforcement  
A.A. Delta College  
B.A. Saginaw Valley State University  
M.S. Central Michigan University

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A.A.S. Delta College  
B.S. Western Michigan University

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B.S. Michigan State University

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B.A. Aquinas College  
M.A.; M.S. Troy State University  
Licensed Professional Counselor

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Computer Trainer  
B.A. Alleghany College

BLEDSON, David  
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B.S. Central Michigan University

BLUE, Beverly  
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R.N. Saginaw General Hospital School of Nursing  
B.S. Siena Heights College  
M.S.A. Central Michigan University

BOEKE, Robert  
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B.B.A. University of Michigan  
J.D. University of Wisconsin

BOWSKY, Robert  
Broadcasting Engineer I  
A.S. Delta College



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M.S. University of Michigan  
M.S.; Ph.D. Oregon State University

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M.S. Wayne State University

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Certificate, Ferris State University

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A.B. University of Nagpur, India  
A.B. University of Rome, Italy  
M.A. University of Michigan

BRONSTETTER, Michele  
Team Supervisor, Physical Plant

BROW, Judith  
Librarian  
A.B.; A.M.L.S. University of Michigan

BROWN, Dean  
Training Specialist  
B.A. Concordia College

BROWN, Roger  
Purchasing Specialist  
Diploma, Michigan State University

BURKE, Nadine  
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M.A.T. Saginaw Valley State University

BUSHONG, Thelma  
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B.A.; M.A. Saginaw Valley State University

BUTCHER, Larry  
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B.S.; M.A. Central Michigan University

CABRERA, Dary  
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Certified Public Accountant  
Certified Management Accountant

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Ph.D. Michigan State University

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# Definitions of College Terms

Don't get lost in College jargon. Understand these terms, which generally are common to all colleges, and your academic life will be easier.

**Academic Year:** September through the following August. Includes the Fall Semester, Winter Semester, Spring Semester, and Summer Session.

**Academic Credits:** See Credits.

**Accredited:** Certified by a specific state, regional, or national organization as meeting standards of quality in instruction, staffing, facilities, finances, and policies.

**Add:** Changing your schedule by adding a course after your initial registration.

**Admission:** Being accepted by Delta so you can register for courses.

**Assessment:** Basic skills tests in English, reading, and math to assist you in selecting courses at the appropriate level. Generally, assessment is required for new students. See Section II, The Enrollment Process, Steps to Success for details.

**Associate Degree:** Degree (diploma) granted after successful completion of a program of study which has a minimum of 62 credits.

**Audit:** Registering for and attending a course, but receiving no grade or credits. Regular tuition and fees must be paid. Audits do not count toward completion of a program or graduation.

**Centers:** See Off-Campus Centers.

**Certificate:** Document granted upon successful completion of a program of study which has a minimum of 30 credits.

**Concurrent Course:** Often referred to as Corequisite. A course that must be taken during the same semester as another course is taken. Concurrent courses are listed at the beginning of the course description. See Section VI for Academic Course Descriptions.

**Contact Hours:** The total hours of lecture and laboratory instruction required for each course.

**Corequisite:** See Concurrent Course.

**Course:** A single subject, such as ENG 111, taken for one semester.

**Credits:** Also referred to as Academic Credits, Credit Hours, and Semester Hours. Each course is assigned a number of credits which generally indicates the number of hours per week the class meets; i.e., a three credit course generally meets three hours each week. Courses with labs and occupational courses, however, generally meet more hours than the number of credits they carry. Tuition and fees are ordinarily charged by credit.

**Curriculum:** See Program of Study.

**Dismissal:** Being required to leave Delta College due to a very low grade point average or unacceptable conduct.

**Drop:** Changing your schedule by dropping a course after your initial registration.

**Dual Degree:** An Associate degree that is earned by completing two specified curricula concurrently. Approved curricula combinations are listed in Section III, page 45.

**Elective:** A course you may elect (choose) to take as opposed to a course you are required to take.

**Fees:** Special charges for courses or services other than tuition.

**Financial Aid:** Money received from various sources (grants, loans, scholarships, jobs) to help students with college costs. Most, but not all, forms of aid are based on financial need.

**Financial Aid Transcript:** A document you are required by federal regulations to have every other college you attended send to the Delta College Office of Financial Aid, which lists any federal aid you may have received or states that you received no aid. Required of financial aid recipients before aid can be awarded.

**Full-Time Student:** Enrolled in 12 or more credits in a semester.

**G.E.D. (General Educational Development):** A high school equivalency certificate for adults who did not receive the traditional high school diploma. It is earned by passing the national G.E.D. exam, which may be taken through Delta Assessment/Testing Services Office.

**General Education:** A group of courses in the areas of social science, natural/physical science, communication, and humanities which provide a common and broadly-based body of knowledge.

**GPA (Grade Point Average):** The GPA is determined by dividing the honor points earned (see definition of honor points) by the number of credits attempted, excluding courses in which you received final grades of "P," "I," "X," "WP," "WE," "W," or "NC." The semester GPA includes grades in each semester; the cumulative GPA includes grades from all semesters at Delta.

**Grade Dispute:** The process available to you if you do not agree with the grade you received in a course. See Section IV, Academic Policies and Information, Disputed Final Grade Policy.

**Grade Ombudsman:** The staff member who will provide you with information and assistance in understanding and following the Grade Dispute process. At Delta, this person is Dr. Burt Fettig, K-132, phone 686-9220.

**Graduation Requirements:** Specific steps you must successfully complete to qualify for a degree or certificate. See Section IV, Academic Policies & Information, Graduation Requirements for details.

**Grants:** Money provided for educational expenses which does not have to be repaid; also called "gift aid".

**Honor Points:** Numerical values assigned to a letter grade for a course ("A" = 4 pts., "B" = 3 pts., "C" = 2 pts., "D" = 1 pt., "E" = 0 pts.), which are then multiplied by the number of credits assigned to the course; i.e., a "B" grade for a three credit course would have three honor points x three credits = 9 honor points.

**In-District Student:** A legal resident of Bay, Midland, or Saginaw county as defined by the Delta College residency policy.

**Instructor-Initiated Drop:** Being dropped from your course by your instructor for either lack of attendance or lack of the required prerequisites.

**Loans:** Money you borrow from your bank or credit union for educational expenses which must be repaid after you leave school.

**MACRAO:** A transfer agreement between many Michigan two- and four-year colleges, which standardizes the basic general education requirements. See Section III, Programs of Study, page 23, for details.

**Ombudsman:** See Grade Ombudsman.

**Orientation:** A program you will participate in as a new Delta student, which will acquaint you with the College facilities, programs, services, and procedures and during which a counselor will assist you in reviewing your program and selecting your courses. See Section II, The Enrollment Process, Steps to Success for details.



**Out-of-District Student:** A legal resident of Michigan, residing in a county other than Bay, Midland, or Saginaw.

**Out-of-State Student:** A legal resident of a state other than Michigan or of a foreign country.

**Part-Time Student:** Enrolled in less than 12 credits in a semester.

**Prerequisite:** Courses which must be successfully completed or requirements which must be met before enrolling in a specific course. Prerequisites are listed at the beginning of the course description. See Section VI for Academic Course Descriptions.

**Probation:** A warning status due to low grades or improper conduct.

**Program of Study:** A group of specific courses which you are required to complete successfully in order to qualify for a degree or certificate.

**Registration:** The time when you enroll in your courses and pay your tuition and fees. See Section II, The Enrollment Process, Registration for details.

**Required Course:** A course in your program that you must take as opposed to one that you elect (choose) to take.

**Schedule of Academic Classes Booklet:** A Delta publication which lists all the courses being offered that semester, the days and times when they will be offered, the location (on or off-Campus) where they will be held, the course fees, the instructors, and the registration schedule. These schedules are published for each semester or session.

**Semester:** Generally 15 weeks in length. The three semesters in an academic year at Delta are Fall (late August through December), Winter (January through April), and Spring/Summer (May through August).

**Semester Hours:** See Credits.

**Session:** Generally, 7 1/2 weeks in length, which is half the length of a semester. The two primary sessions in an academic year at Delta are Spring (May through June) and Summer (July through August).

**Service Credits:** Credits assigned to Community Services courses. These credits are not applicable to a Delta Associate degree or Certificate and are not transferable to other colleges.

**Steps to Success (STS):** A process in which you will participate as a new student, which includes Assessment, Orientation, and Registration. See Section II, The Enrollment Process, Steps to Success for details.

**Transcript:** Your official Delta College record listing all academic courses attempted with grades, credits, and honor points; all transfer credits accepted; any credit awarded by examination or advanced placement; and your cumulative GPA.

**Transfer:** The official process of moving from attendance at one college or university to attendance at another college or university.

**Tuition:** The money you pay the College for instruction and services. A dollar amount is assigned to each credit. Tuition is determined by multiplying the dollar amount by the number of credits for which you are registering. In-District, Out-of-District, and Out-of-State tuition rates are different. See the Schedule of Academic Classes booklet for current tuition rates.

**Withdrawal:** Dropping all of your courses and leaving Delta College. Official withdrawal must be done through the Records & Registration Office.

**Withdrawal Alert:** A warning status due to having withdrawn from 50% or more of your courses while attending Delta.



*"I love my job!"*

*"I like the small classes and I like the fact that the faculty care about the students and take the time to help them. I also definitely like the variety of students that attend Delta. We have students of many different ages and I like that because it makes the classes richer. I just really like Delta College."*

Carol Jacobs,  
Associate Professor of Business,  
has taught at Delta 26 years



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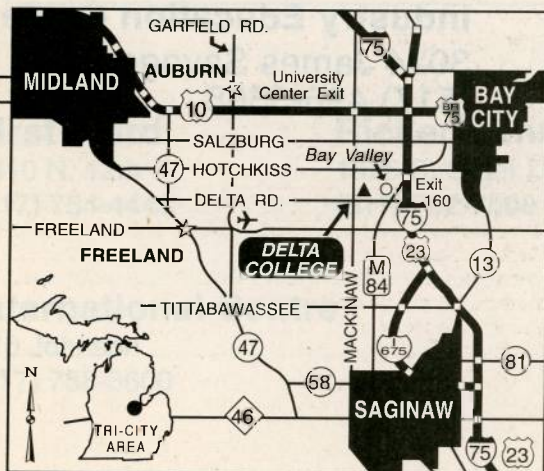
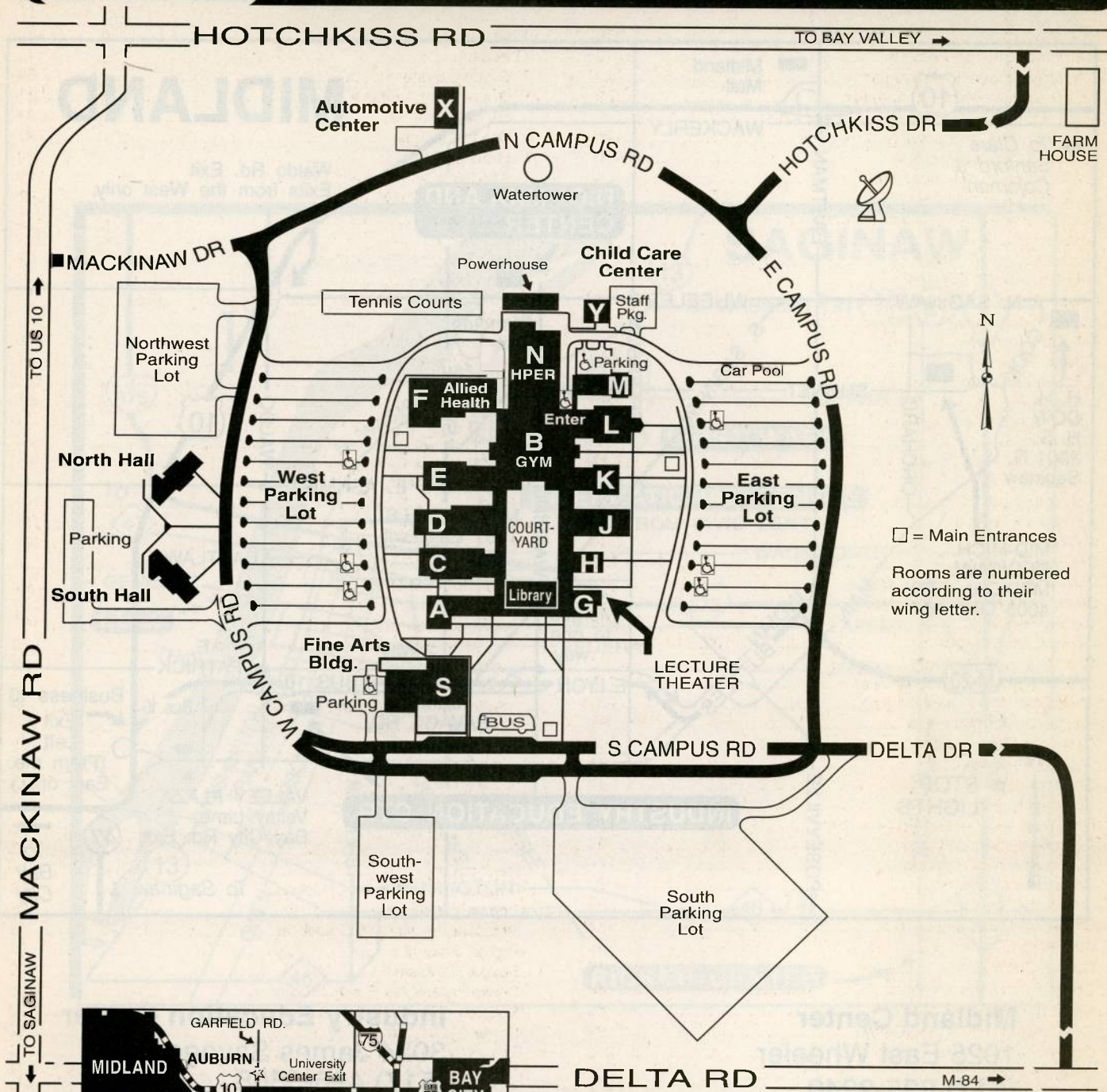
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**Delta College**  
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# DELTA COLLEGE MAIN CAMPUS



## From I-75

Take exit 160, turn south onto M-84. Go to the first traffic light and turn right onto Delta Road. Travel 1 mile and the College is on the right.

## From US-10

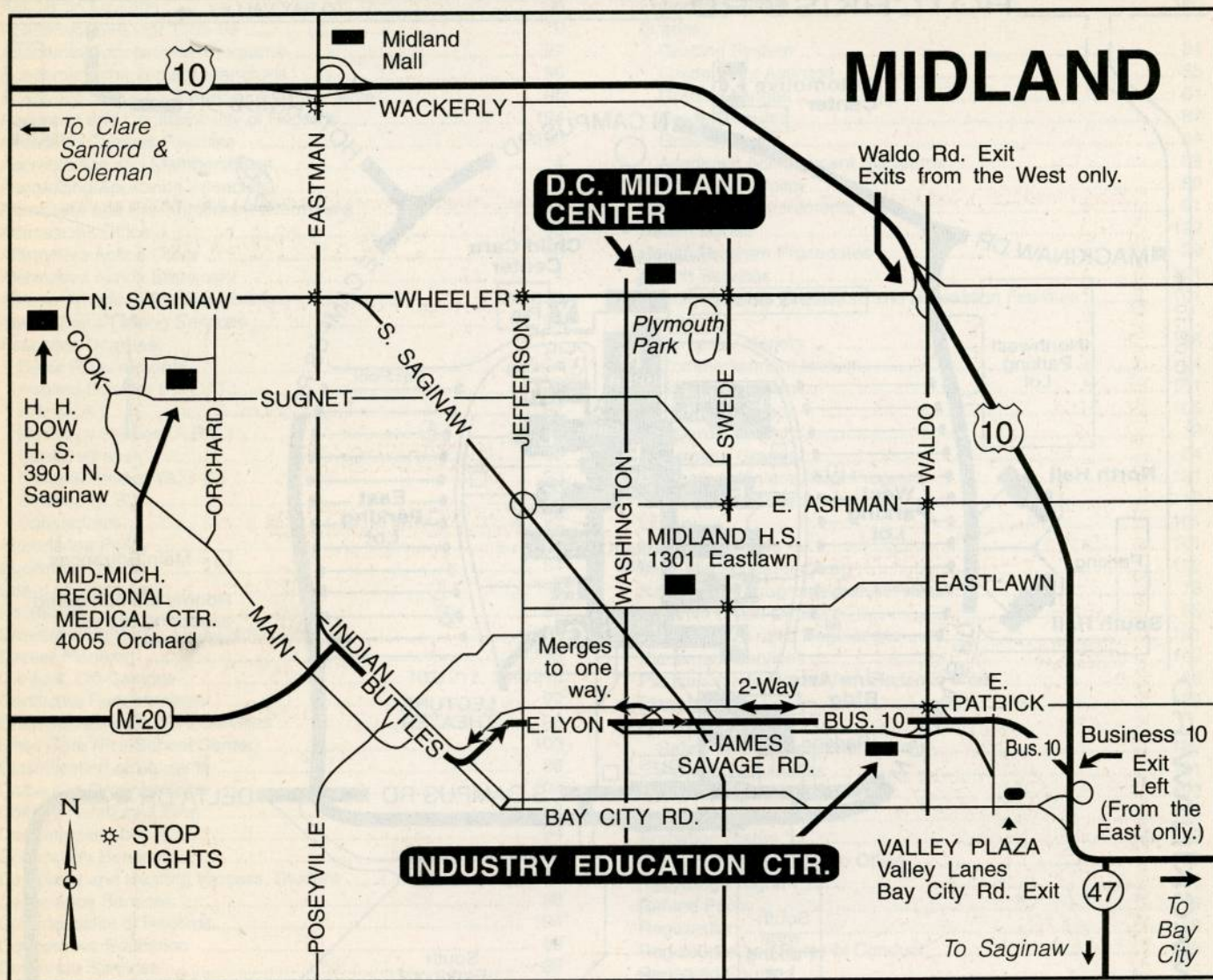
Exit south at the Mackinaw Road exit onto Mackinaw Road. Travel about 2 miles, past the blinker light at the Hotchkiss Road intersection. College entrance is on the left.





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## DELTA COLLEGE MIDLAND CENTER & INDUSTRY EDUCATION CENTER



**Midland Center**  
1025 East Wheeler  
(517) 835-2240

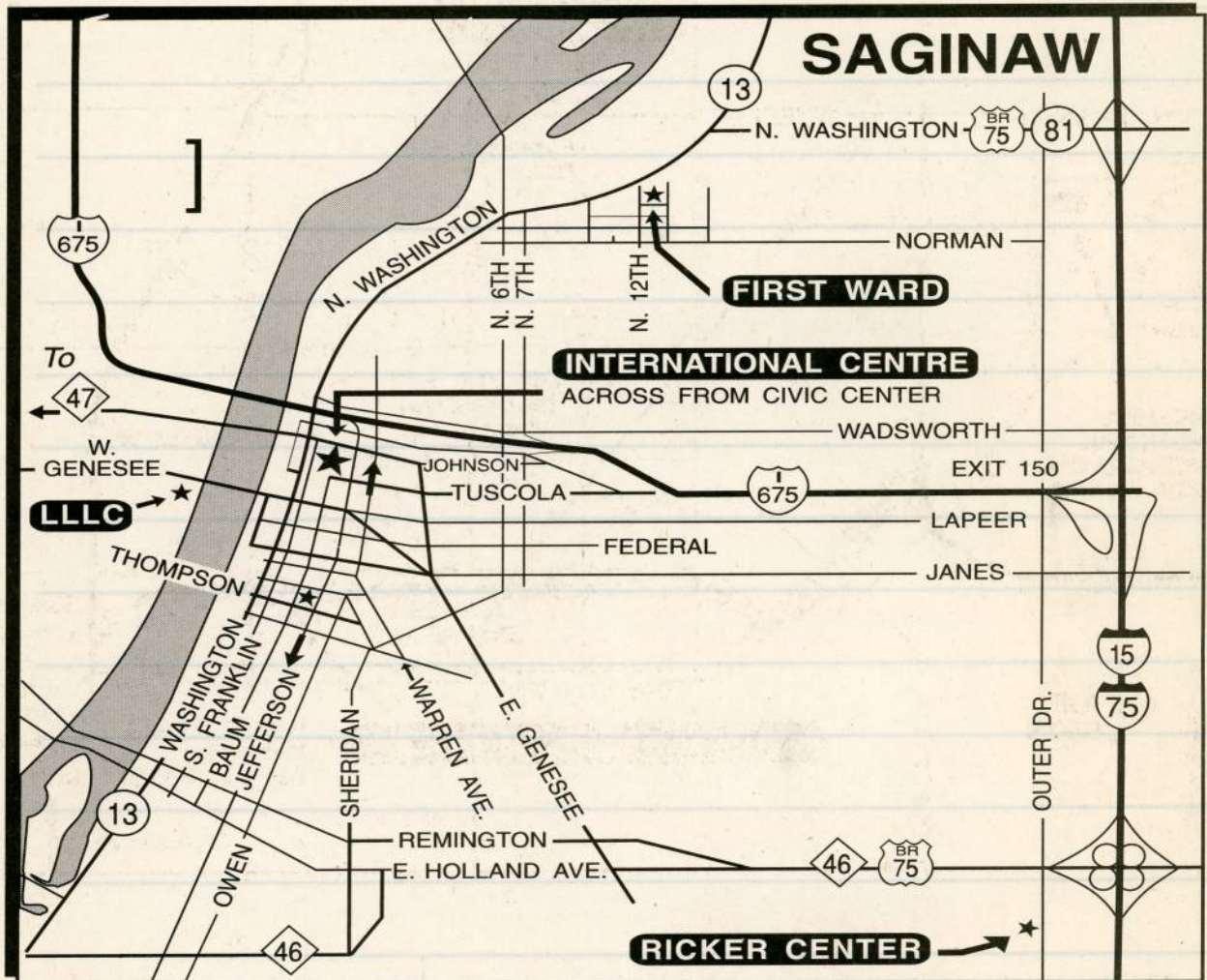
**Industry Education Center**  
3024 James Savage Road  
(517) 496-3368





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## DELTA COLLEGE SAGINAW CENTERS



### First Ward

1410 N. 12th  
(517) 754-4443

### Ricker Center

1925 S. Outer Dr.  
(517) 752-7500

### Ruben Daniel Lifelong Learning Center (LLLC)

115 W. Genesee  
(517) 776-0600

### International Centre

310 Johnson  
(517) 758-3600



## NOTES

[illegible]







